

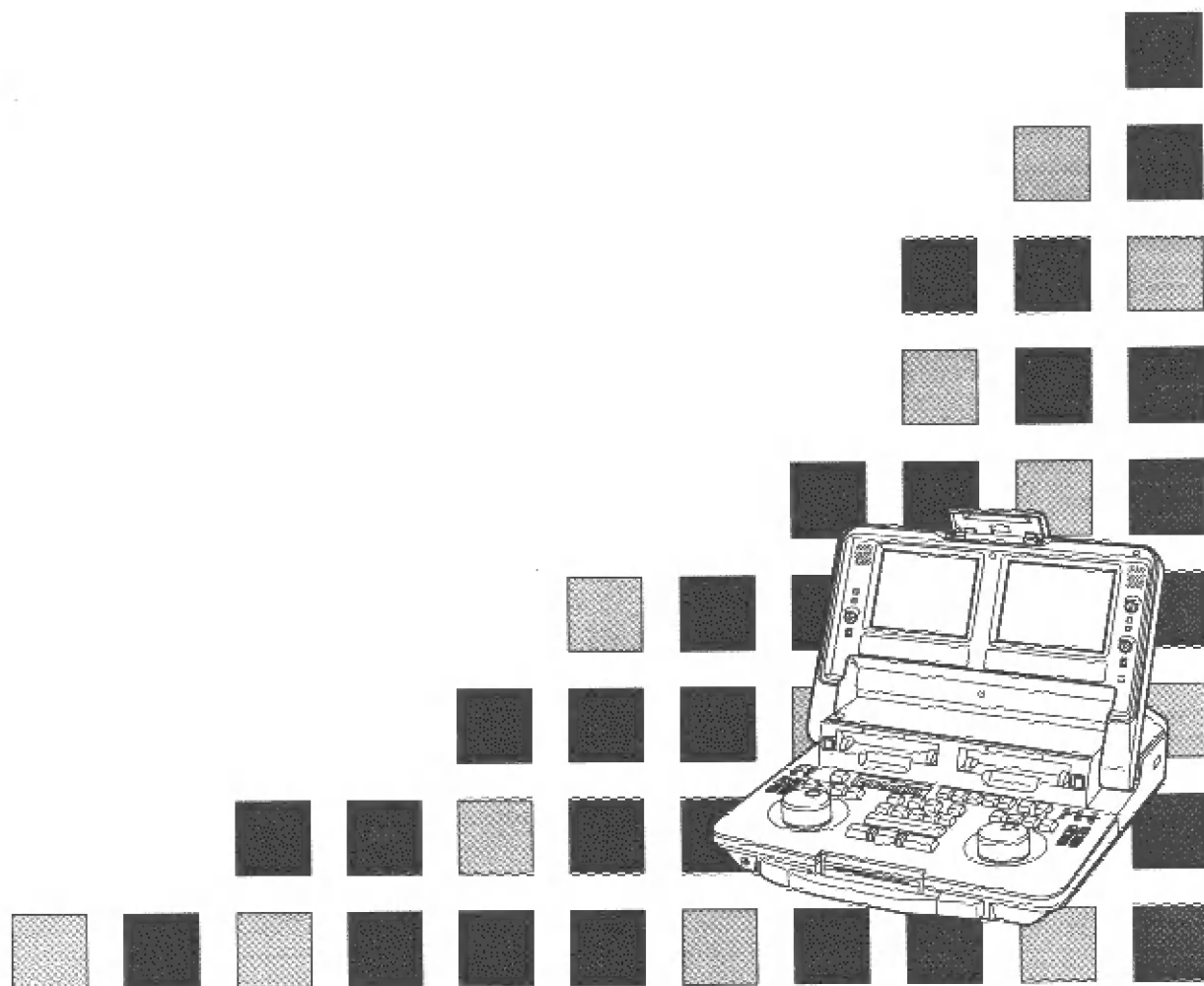
# Panasonic

**DVCPRO**  
DIGITAL VIDEO CASSETTE

Lap Top Editor

AJ-LT75<sub>P</sub>

## Operating Instructions



# FOR YOUR SAFETY



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,  
DO NOT REMOVE COVER (OR BACK).  
NO USER-SERVICEABLE PARTS INSIDE.  
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## CAUTION:

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

## WARNING:

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

## FCC Note:

This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

 is the safety information.

## IMPORTANT

"Unauthorized recording of copyrighted television programs, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

- Do not insert fingers or any objects into the video cassette holder.
- Avoid operating or leaving the unit near strong magnetic fields. Be especially careful of large audio speakers.
- Avoid operating or storing the unit in an excessively hot, cold, or damp environment as this may result in damage both to the unit and to the tape.
- Do not spray any cleaner or wax directly on the unit.
- If the unit is not going to be used for a length of time, protect it from dirt and dust.
- Do not leave a cassette in the unit when not in use.
- Do not block the ventilation slots of the unit.
- Use this unit horizontally and do not place anything on the top panel.
- Cassette tape can be used only for one-side, one direction recording. Two-way or two-track recordings cannot be made.
- Cassette tape can be used for either Color or Black & White recording.
- Do not attempt to disassemble the unit. There are no user serviceable parts inside.
- If any liquid spills inside the unit, have the unit examined for possible damage.
- Refer any needed servicing to authorized service personnel.

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# INTRODUCTION

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Thank you for purchasing this AJ-LT75 laptop editor.

This is a digital VTR using 1/4-inch tapes.

This laptop editor with its two digital VTRs features two mechanisms, two liquid-crystal monitors and editing control sections all combined into a single editing package. This single unit can perform cut editing on its own while its compact size, light weight and portability enable it to be taken anywhere with the greatest of ease.

## Features

- **Compact size and light weight**

This editing package comes with two digital VTRs.

Its compact size and light weight make the laptop extremely portable so that it can be taken anywhere for ready operation on, for instance, an office desk.

- **Cut editing**

The two digital VTRs make it possible to conduct assemble editing and insert editing (video, audio and time code signals exactly as desired). These types of editing can be performed automatically.

- **Transmission function**

The sound and playback images of the two digital VTRs can be transmitted from the output connectors provided for the respective signals. This feature is ideal for forwarding edited programs. (Refer to the system connection diagram.)

- **Back-up recording**

Back-up recording is enabled by the two digital VTRs. One of the VTRs can be used for playback and the other for recording. (Refer to the system connection diagram.)

- **Recording duration of up to 123 minutes**

Either M cassette tapes (max. 63 minutes) or L cassette tapes (max. 123 minutes) can be used. In both cases, the tape is one-fourth of an inch wide to achieve a compact design.

- **Compatibility with consumer-use equipment**

Consumer-use Mini DV cassette tapes which have been shot using a consumer-use digital camera can be played back on this laptop using the cassette adaptor (option: AJ-CS750P).

- **Liquid-crystal monitors**

The laptop has two liquid-crystal TV monitors which support the two digital VTRs. This enables the images to be easily checked during the course of editing.

- **Volume controls**

Each of the digital VTRs provides volume controls for recording and playing back the sound of two channels. The level meters below the liquid-crystal monitors make it easy to check the signal strength. There are also two speakers, and the actual sound can be checked using the desired combination of facilities.

- **Functional I/O interfaces**

**Analog I/O:** Each VTR is equipped with video and audio I/O connectors.

**9-pin (remote control) ×2**

- **2-channel sound**

Each of the two sound channels can be edited separately. Mix, swap and other functions can also be selected.

- **Dial jog and shuttle**

Edit points can be searched smoothly by manipulating the jog dial. Shuttle is possible up to 32 times the normal tape speed in the forward or reverse direction.

- **Encoder provided**

Each VTR has an encoder to adjust the output images. These encoders can be used for forwarding and other applications.

- **Editing of 100 events**

One hundred programs can be registered. Their edit points can be stored in the internal memory.

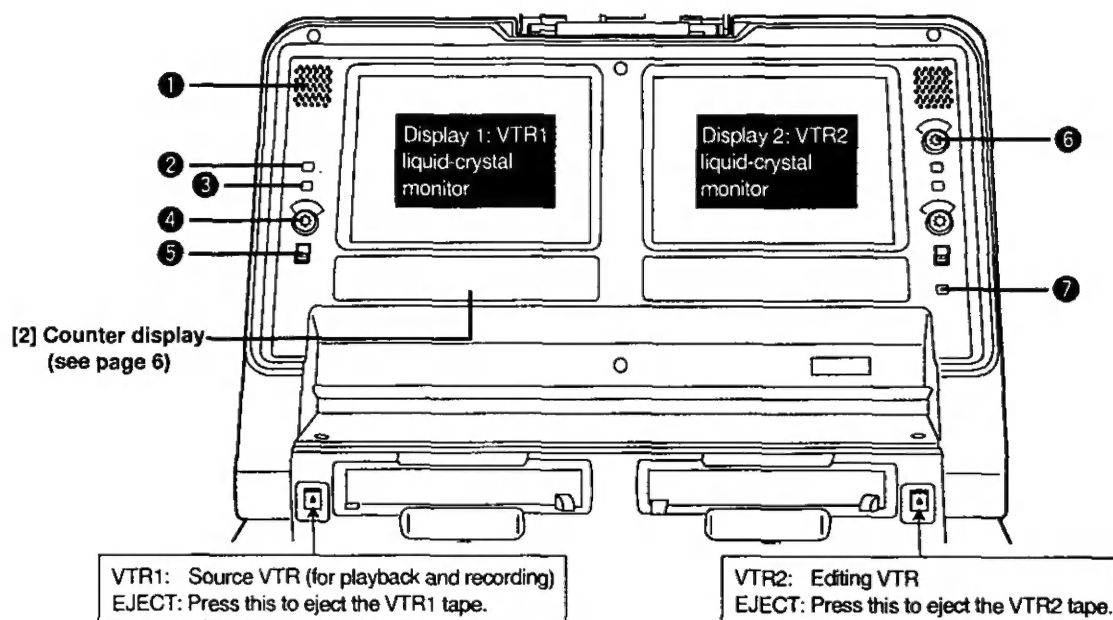
- **Time code**

This laptop incorporates a time code generator (TCG)/time code reader (TCR) which can be used for time code editing.

- **On-screen settings**

Highly personalized functions can be set on-screen.

# CONTROLS AND THEIR FUNCTIONS



## [1] Liquid-crystal monitor section

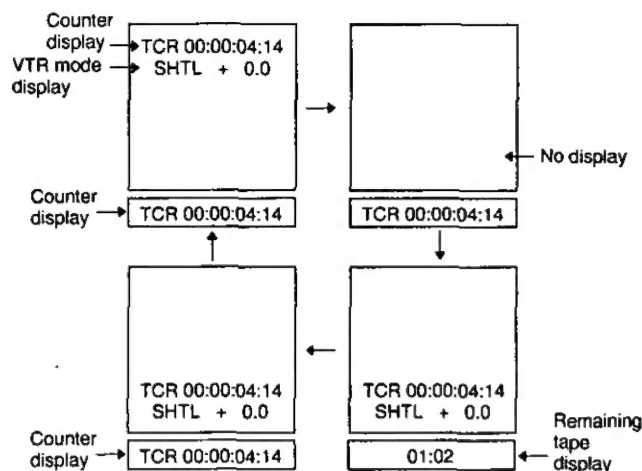
### 1 Audio monitor speaker

The VTR1 (or VTR2) monitor sound is heard through this speaker. Depending on the position selected by the SPEAKER/HEADPHONES switch, the VTR1 and/or VTR2 sound is selected and output.

### 2 COUNTER/REMAIN switch

This selects the VTR1 display tube contents. When it is switched between the COUNTER and REMAIN positions, the on-screen (OSD) display position is switched. (Top, bottom and OFF)

Each time the switch is pressed, the display is switched as shown below.



### 3 EXT CHECK button

While this button is held down, the external input of VTR1 can be checked. The level meter of the display section is set to the fine mode.

### 4 BRIGHTNESS control

This is used to adjust the brightness of the VTR1 liquid-crystal display.

### 5 LCD switch

This controls the power to the VTR1 LCD monitor and selects the brightness of the backlight.

**LIGHT:** For making the backlight brighter.

**DARK:** For making the backlight dimmer.

**OFF:** For turning off the LCD.

### 6 LEVEL control

This is used to adjust the output level of the built-in speakers and headphones.

### 7 TOTAL button (for VTR2 only)

While this button is held down, the total editing time from the edit start point to the current editing program appears on the display counter.

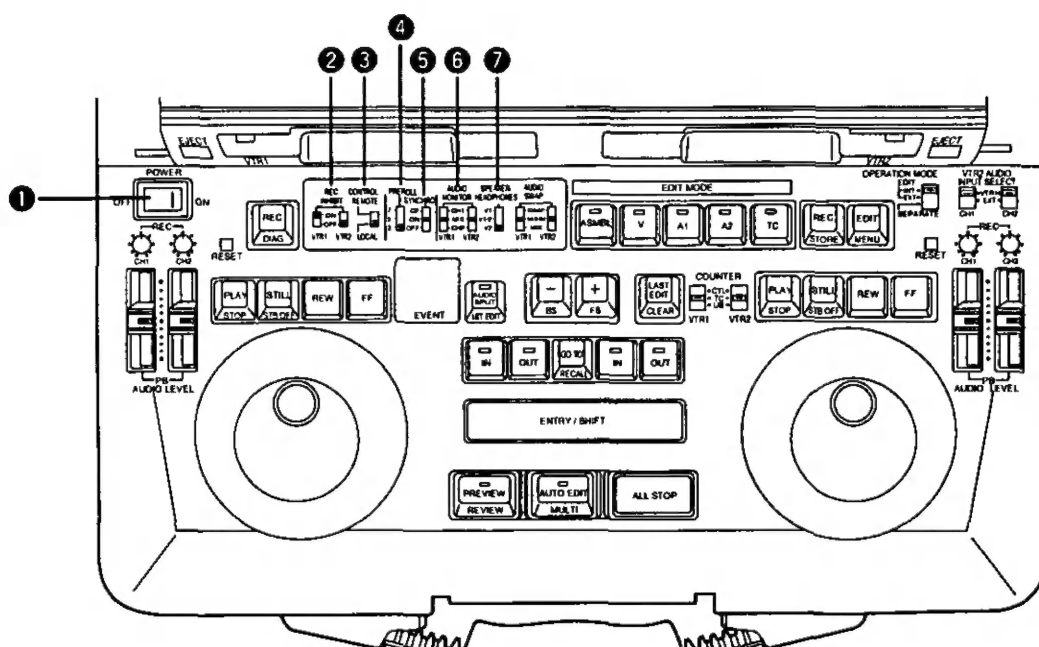
The description of the VTR2 display is exactly the same as that for the VTR1 display.

\* The display shown above appears on the LCD monitor only when set-up item No.001 (LCD SUPER) is set to ON.





# CONTROLS AND THEIR FUNCTIONS



## [3] Front Keyboard Switches

### ① POWER switch

### ② REC INHIBIT switch

**ON:** For inhibiting recording.

**OFF:** Recording is possible at this position.

Recording with VTR1 is possible only when the OPERATION MODE switch has been set to SEPARATE.

### ③ CONTROL switch

**REMOTE:** For controlling the laptop from the external REMOTE connector (9P).

**LOCAL:** For controlling the laptop using the controls on the laptop's front panel.

### ④ PREROLL switch

This sets the preroll time to 3, 5 or 7 seconds.

When it is not possible to achieve synchronization, the preroll time is incremented by one setting. At the 7-second setting, the time remains at 7 seconds even if synchronization is lost.

### ⑤ SYNCHRO switch

This sets whether synchronization and/or color framing are to be performed.

**CF:** Both synchronization and color framing are performed.

**ON:** Synchronization is performed but color framing is not performed.

**OFF:** Synchronization is not performed.

### ⑥ AUDIO MONITOR switch (for both VTR1 and VTR2)

**CH1:** The CH1 sound is output.

**MIX:** The sounds of CH1 and CH2 are mixed and output.

**CH2:** The CH2 sound is output.

### ⑦ SPEAKER/HEADPHONES switch

This selects the sound which is output from the speaker or headphones.

**V1:** The sound selected by the AUDIO MONITOR switch of VTR1 is output (in stereo when the AUDIO MONITOR switch has been set to the MIX position).

**V1+V2:** The sound by the AUDIO MONITOR switch of VTR1/VTR2 is output.

Left: Output sound of VTR1

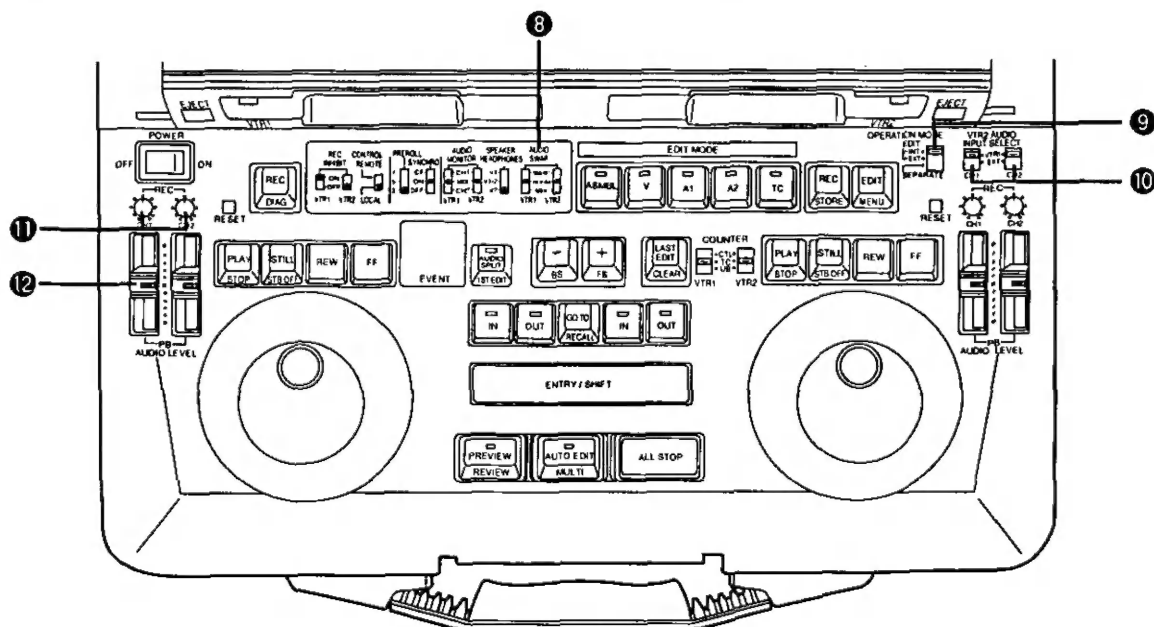
Right: Output sound of VTR2

**V2:** The sound selected by the AUDIO MONITOR switch of VTR2 is output (in stereo when the AUDIO MONITOR switch has been set to the MIX position).

- This is valid only when set-up menu item No.711 (AUTO MONI) has been set to "V1+V2." When set-up menu item No.711 (AUTO MONI) has been set to "AUTO," the sound of the VTR operated last is automatically output regardless of the switch position.

- When V1+V2 is selected, and editing or dubbing is performed from VTR1 to VTR2, the sound may be accompanied by an echo effect: this is normal and not indicative of malfunctioning. If this effect is unpleasant, select V1 or V2, or set AUDIO MONI on the above item to "AUTO."

# CONTROLS AND THEIR FUNCTIONS



## 8 AUDIO SWAP switch (for both VTR1 and VTR2)

This selects the audio output. (It is also effective when an internal connection is made from VTR1 to VTR2.)

	CH1 output connector	CH2 output connector
<b>SWAP</b>	CH2 sound	CH1 sound
<b>NORM</b>	CH1 sound	CH2 sound
<b>MIX</b>	CH1, CH2 sound mixed	CH1, CH2 sound mixed

- The SWAP, NORM or MIX sound is not output to the AUDIO MON OUT connector or HEADPHONES jack.
- The sound which is output from the built-in speakers and headphones remains unchanged.

## 9 OPERATION MODE switch

**INT:** In this mode, editing is performed using an internal connection from VTR1 to VTR2. VTR1 enters the recording prohibited mode.

**EXT:** In this mode, editing is performed using an external analog connection from VTR1 to VTR2. VTR1 enters the recording prohibited mode.

**SEPARATE:** In this mode, VTR1 and VTR2 operate separately.

### Note:

When editing a tape in VTR1 in the INT mode, the output signals from the PB VIDEO OUT connector or MONITOR OUT connector may be affected by vertical dancing, however no problem are posed with editing.

## 10 VTR2 AUDIO INPUT SELECT switch

This selects the audio CH1 and CH2 input of VTR2.

**VTR1:** The audio output signals of VTR1 are supplied to VTR2.

**EXT:** The external audio input signals of VTR2 are supplied to VTR2.

## Level Controls

### 11 REC AUDIO LEVEL controls (for both VTR1 and VTR2)

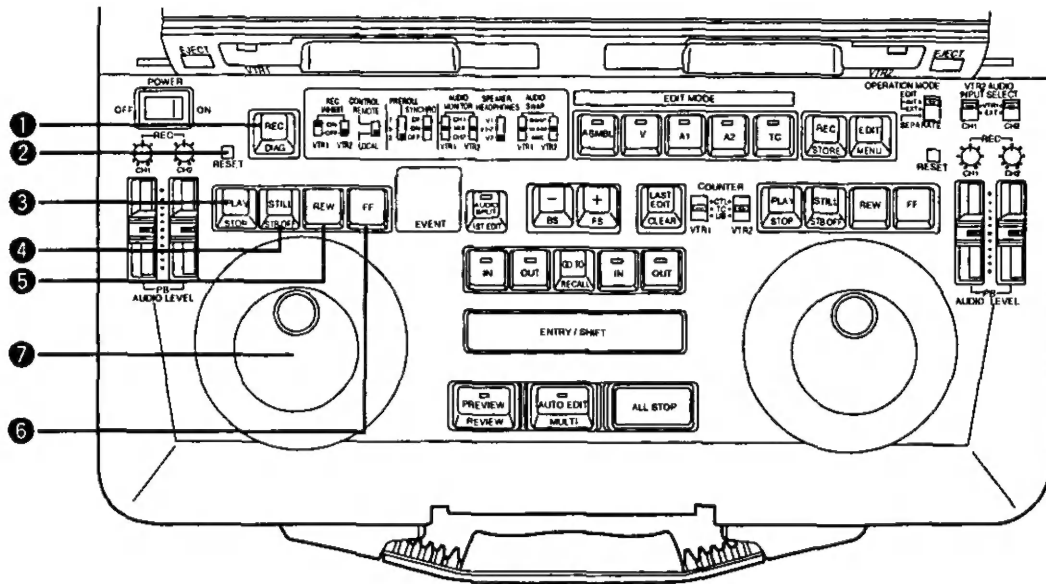
**CH1:** For adjusting the CH1 recording level.  
**CH2:** For adjusting the CH2 recording level.

### 12 PB AUDIO LEVEL controls (for both VTR1 and VTR2)

**CH1:** For adjusting the CH1 playback level.  
**CH2:** For adjusting the CH2 playback level.



# CONTROLS AND THEIR FUNCTIONS



Controls and their functions

## [4] Player/Recorder Control Section

### ① REC button (for recorder control section only)

To set the recorder VTR manually to the recording mode, press this button and the PLAY button together. Recording is possible on the VTR1 only if the OPERATION MODE switch of VTR1 is set to "SEPARATE."

**DIAG (SHIFT+DIAG):** Press these buttons to display the DIAG menu.

### ② RESET button

- This is used to reset the CTL counter on the VTR1 display section or to reset an edit point.
- When it is pressed together with the IN or OUT button, the registered IN point or OUT point is deleted.

## [5] VTR Control Section (for both VTR1 and VTR2)

### ③ PLAY (STOP) button

Press this button to set the VTR to the playback mode.

**STOP (SHIFT+PLAY):** Press these buttons to set the VTR to the stop mode.

### ④ STILL (STB OFF) button

**STILL:** Press this button to set the VTR to the still picture mode.

**STBOFF (SHIFT+STILL):** Press these buttons to release the standby mode in the still-picture or stop mode.

### ⑤ REW button\*

Press this to rewind the tape.

### ⑥ FF button\*

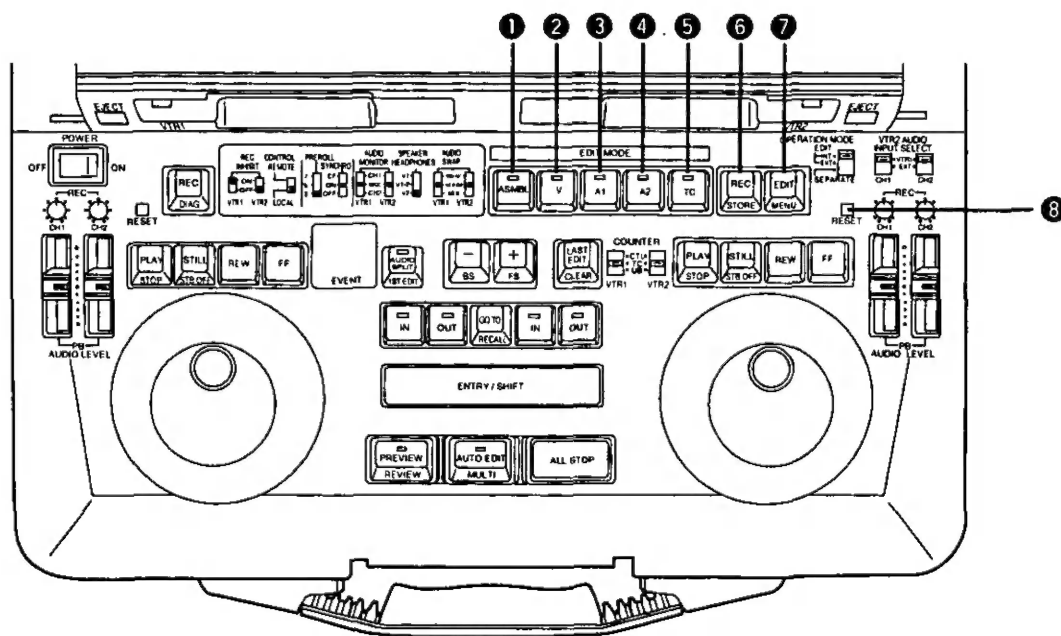
Press this to fast forward the tape.

### ⑦ Search dial button

This controls the tape travel. Use it for locating edit points or for playback. In the "out" position, the dial is set to the shuttle mode; in the "in" position, it is set to the jog mode. Each time the dial is pressed, the selection is toggled between these two modes.

(\*) The tape stops traveling when the REW and FF buttons are pressed together.

# CONTROLS AND THEIR FUNCTIONS



## [6] Edit Mode Setting Section

### ① ASMBL button/lamp

For assemble editing, press this button. Check that its lamp is lighted up.

### ② V button/lamp

For inserting video signals, press this button. Check that its lamp is lighted up.

### ③ A1 button/lamp

For inserting audio CH1 signals, press this button. Check that its lamp is lighted up.

### ④ A2 button/lamp

For inserting audio CH2 signals, press this button. Check that its lamp is lighted up.

### ⑤ TC button/lamp

For inserting time code signals, press this button. Check that its lamp is lighted up.

### ⑥ REC (STORE) button

**REC:** To set the VTR manually to the recording mode, press this button and the PLAY button together. When the REC button is pressed while the REC INHIBIT switch is at OFF, the VTR2 video and audio CH1 and CH2 will be set to the E-E mode while the button is held down.

**STORE (SHIFT+REC):** Press these buttons to set the VTR1 (playback) or VTR2 (recording) edit points and store the edit data in the internal memory.

The EVENT counter is simultaneously incremented. When the set-up operations are performed, the data which has been set is saved in the set-up memory.

### ⑦ EDIT (MENU) button

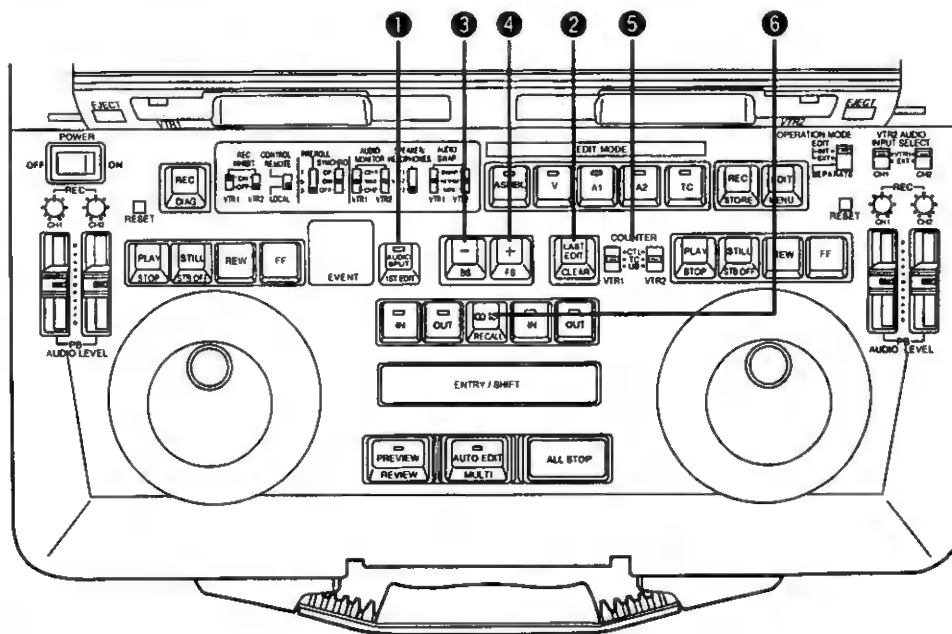
**EDIT:** Press this button to establish the E-E mode in accordance with the edit mode. While it is held down, the VTR2 video and audio input signals are output without being recorded in accordance with the edit mode. To conduct a recording, press this button together with the PLAY button in the VTR2 control section. While VTR2 is in the playback mode.

**MENU (SHIFT+EDIT):** Press these buttons to perform dial menu set-up.

### ⑧ RESET button

- This resets the CTL counter on the VTR2 display section.
- When the IN or OUT button is pressed together with the RESET button, the registered IN or OUT point is cleared.

# CONTROLS AND THEIR FUNCTIONS



## [7] Automatic Editing Control Section

### 1 AUDIO SPLIT (1ST EDIT) button

**AUDIO SPLIT:** For audio split editing, press this button and light up its lamp. Then set the audio IN point.

**1ST EDIT (SHIFT+AUDIO SPLIT):** For details, please refer to preparation of editing tape on page 35 and set-up menu item No. 311 (1ST EDIT DUR).

### 2 LAST EDIT (CLEAR) button

**LAST EDIT:** This button accesses the previously previewed contents. (It alternately accesses two sets of contents whose preview has been completed.)

**CLEAR (SHIFT+LAST EDIT):** These buttons delete the registered event. The "d" display appears for EDL.

### 3 - (BS) Minus trim button

—: When the IN or OUT point which has been input is to be returned by one frame, this trim button is pressed while the IN or OUT button is pressed. To use this function continuously, keep pressing the buttons. To set further back both the IN and OUT points simultaneously for editing, press this trim button while the IN and OUT buttons are pressed.

**BS (SHIFT+—):** These buttons access the previous edit. Keep pressing the button to execute the function continuously.

### 4 + (FS) Plus trim button

+: When the IN or OUT point which has been input is to be advanced by one frame, this trim button is pressed while the IN or OUT button is pressed. To use this function continuously, keep pressing the buttons. To advance both the IN and OUT points simultaneously for editing, press this trim button while the IN and OUT buttons are pressed.

**FS (SHIFT+“+”):** These buttons access the last event. Keep pressing the button to execute the function continuously.

### 5 COUNTER switches

These switches select the counter reference for VTR1 and VTR2.

**CTL:** At this switch position, the CTL pulse count after resetting appears on the counter display. It is reset by the RESET button.

**TC:** The time code (absolute value) which has been read appears at this position. It is not reset even if the RESET button is pressed.

**UB:** The user bit which has been read appears at this position.

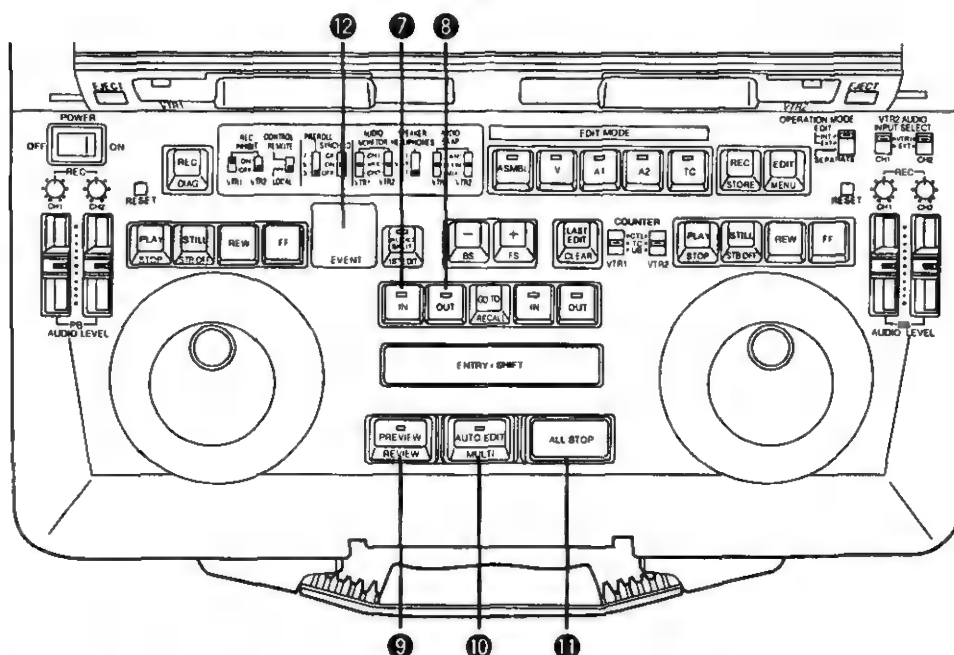
### 6 GO TO/RECALL button

**GO TO:** To check the IN or OUT point image, press the IN or OUT button while holding down the GO TO button. In the audio split edit mode, the audio IN point is searched when the IN button is pressed.

**RECALL (SHIFT+GO TO):** These buttons re-register an event which was deleted in the EDL mode. The "d" display changes to "no display."

This button does not work when the SEPARATE MODE switch has been set to SEPARATE.

# CONTROLS AND THEIR FUNCTIONS



## 7 IN button (for both VTR1 and VTR2)

Press this button while holding down the ENTRY button to register the IN point of the player or recorder. Press it alone to check the IN point. While it is held down, the IN point appears on the display. To display the editing duration, press the IN and OUT buttons together. “---:---:---” is displayed when the edit IN and OUT points are not registered.

## 8 OUT button (for both VTR1 and VTR2)

Press this button while holding down the ENTRY button to register the OUT point of the player or recorder. Press it alone to check the OUT point. While it is held down, the OUT point appears on the display. To display the editing duration, press the OUT and IN buttons together.

## 9 PREVIEW/REVIEW button

**PREVIEW:** To conduct an editing rehearsal, press this button and light up its lamp.

**REVIEW (SHIFT+PREVIEW):** When reviewing the edited block, press this button and light up its lamp.

This button does not work when the SEPARATE MODE switch has been set to SEPARATE.

## 10 AUTO EDIT/MULTI button

**AUTO EDIT:** To start automatic editing, press this button and light up its lamp.

**MULTY (SHIFT+AUTO EDIT):** Press these buttons to edit two or more events in succession from the current edit in the EDL mode. Editing is executed automatically until either the editing of the last event is completed or the ALL STOP button is pressed to forcibly terminate the editing.

This button does not work when the SEPARATE MODE switch has been set to SEPARATE.

## 11 ALL STOP button

When this button is pressed during preview, automatic editing or review, the ongoing operation is stopped. However, only VTR2 is stopped when the OPERATION MODE switch has been set to “SEPARATE.” When the button is pressed together with the CLEAR button, all the events in the EDL are deleted, and the event number is set to “n01.”

## 12 Event number display

Up to 100 (01 to 99, 00) edit data are controlled inside the laptop.

Two-digit event numbers appear on this display. Depending on the edit status, “n” or “d” appears in front of the event number.

**n:** A new event which is not registered in the EDL.

**d:** An event which was deleted from the EDL.

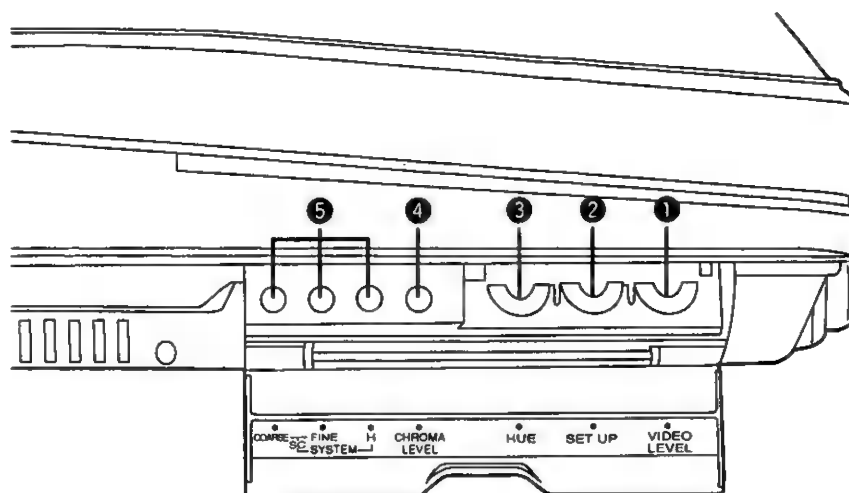
**No display:** An event which is registered in the EDL.

**FULL:** All 100 events have been registered.

**-:** When the laptop is operated by remote control or when the OPERATION MODE switch has been set to “SEPARATE.”

**rsT:** When the power was turned on or when resetting was performed.

# CONTROLS AND THEIR FUNCTIONS



## [8] Side Panel Section (for both VTR1 and VTR2)

Signals conveyed via an internal connection cannot be adjusted.

### ① VIDEO LEVEL control

This is used to adjust the video level of the VTR's video output.

### ② SET UP control

This is used to adjust the set-up level of the VTR's video output signals.

### ③ HUE control

This is used to adjust the hue of the VTR's video output signals.

### ④ CHROMA LEVEL control

This is used to adjust the chroma level of the VTR's video output signals.

### ⑤ SYSTEM controls

**H:** This is used to adjust the system phase in SC period increments.

**SC FINE:** This is used to adjust the SCH phase only; the SC phase is changed (the H phase remains unchanged).

**SC COARSE:** This is used to adjust the SCH phase in 90-degree increments (the H phase remains unchanged).

## [9] Front Section

### ① Headphone jack (Mini stereo)

- When the headphones are plugged into this jack, the sound will no longer be heard through the built-in speaker.
- Adjust the headphones output level using the LEVEL control in the LCD monitor section.

## [10] Top Section

### ② VTR operation display LED

This indicator allows the user to check the operation status of the VTR even when the display is closed.

**Off:** Indicates the power OFF status.

**Lights:** Indicates that the power is on and the tape is stopped.

**Flashes (at approx. 1-second intervals):**

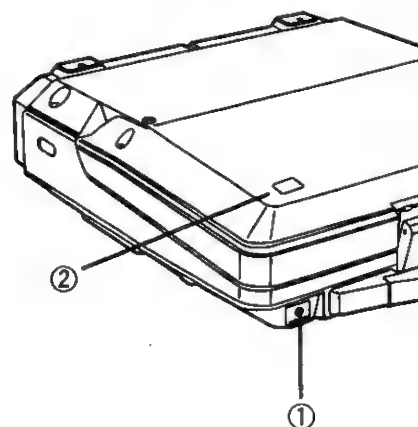
Indicates that a tape is traveling in one of the VTRs.

**Flashes (at approx. 0.5-second intervals):**

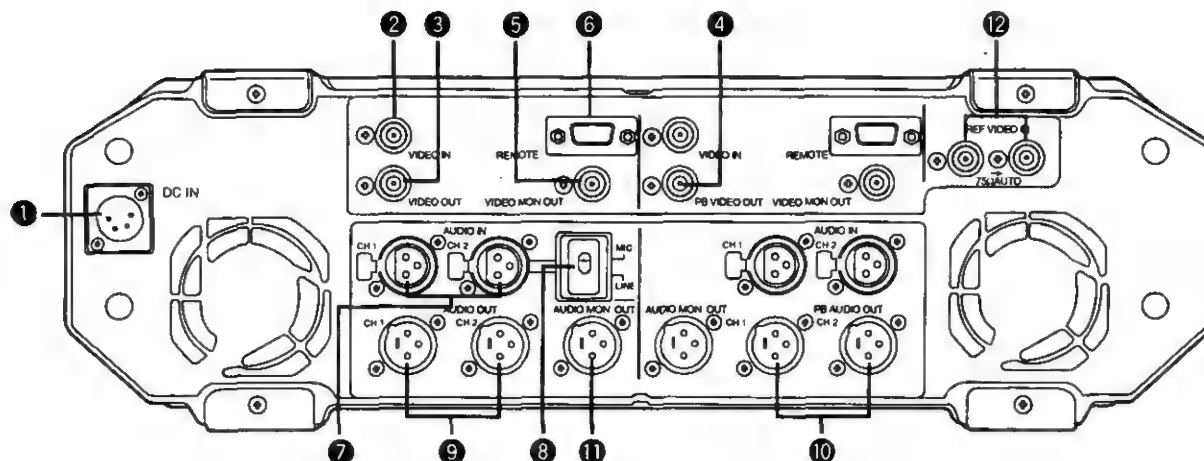
Indicates that tapes are traveling in both of the VTRs.

**Flashes (at approx. 0.25-second intervals):**

Indicates the auto OFF status.



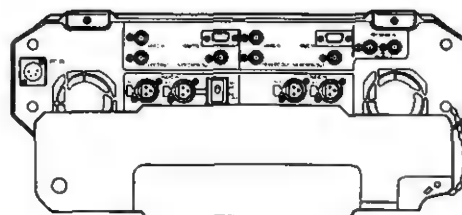
# CONTROLS AND THEIR FUNCTIONS



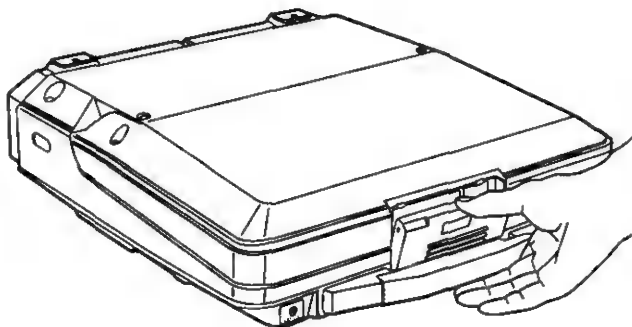
## Connector Section (for both VTR1 and VTR2)

- ① DC IN socket (XLR 4P)**  
DC power input socket.  
The AC adaptor AJ-B75 (optional accessory) must be used to supply the power. The unit's operation cannot be guaranteed if any other power supply is used instead.
- ② VIDEO IN connector (BNC)**  
The analog composite signal is supplied to this connector.
- ③ VIDEO OUT connector (BNC) (for VTR2 only)**  
The analog composite signal is output from this connector.
- ④ PB VIDEO OUT connector (BNC) (for VTR1 only)**  
The analog composite signal is output from this connector only during playback. (The E-E signal is not output.)
- ⑤ VIDEO MON OUT connector (BNC)**  
The video monitor signal is output from this connector.
- ⑥ REMOTE connector (D-SUB, 9P)**  
RS-422A Interface remote connector.
- ⑦ AUDIO IN connectors (CH1/CH2) (XLR ×2)**  
The analog audio signals are supplied to these connectors.
- ⑧ CH2 INPUT level switch**  
Used to select the analog audio input signal CH2 level.  
**LINE:** Line input (+4/0/-20 dBu)  
**MIC:** MIC input (-50 dBu)
- ⑨ AUDIO OUT connectors (CH1/CH2) (XLR ×2) (for VTR2 only)**  
Analog audio signals are output from these connectors.
- ⑩ PB AUDIO OUT connectors (CH1/CH2) (XLR ×2) (for VTR1 only)**  
The analog audio signals are output from these connectors only during playback. (The E-E signals are not output.)
- ⑪ AUDIO MON OUT connector (XLR)**  
The audio monitor signal is output from this connector.
- ⑫ REF VIDEO IN connectors (BNC ×2)**  
Analog composite signals are supplied to these connectors.  
These are loop-through connectors provided with automatic 75-ohm termination.

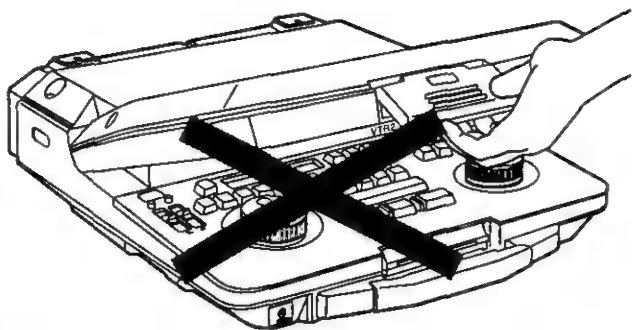
Attach the supplied connector cover to the unit, when carrying the unit around.



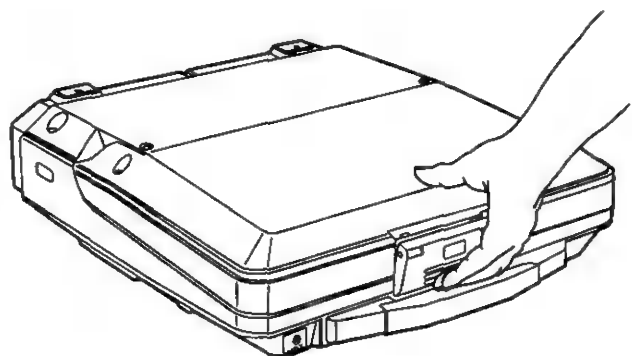
# OPENING AND CLOSING THE LAPTOP



Pull the lever and release the lock.

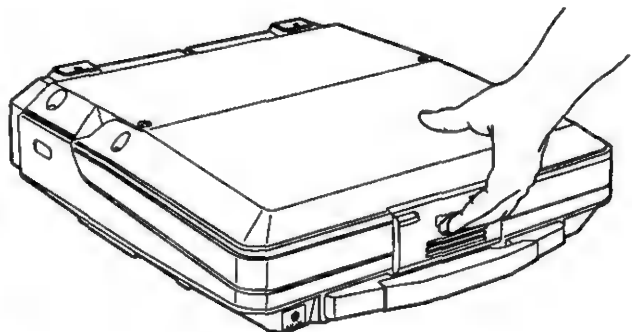


Do not take hold of the lever and use it to open the laptop.



Close the laptop while pushing the bottom of the lever, as shown in the figure on the left.

- 1 Push the bottom of the lever.
- 2 Push up the lever.



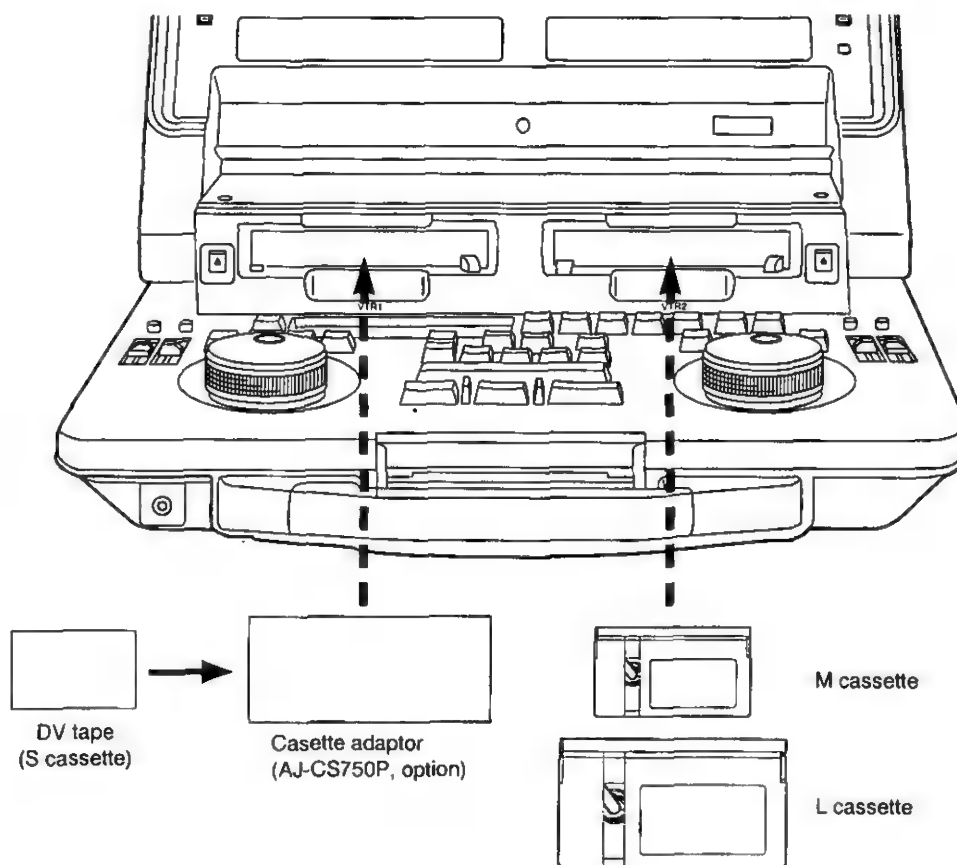
## Notes:

1. Take care not to catch your fingers in the cover while opening or closing it.
2. Take care not to use this unit on bedding or a carpet.



# COMPATIBLE TAPES

Align the cassette tape with the center of the loading slot, and push it in gently. It is then loaded automatically.



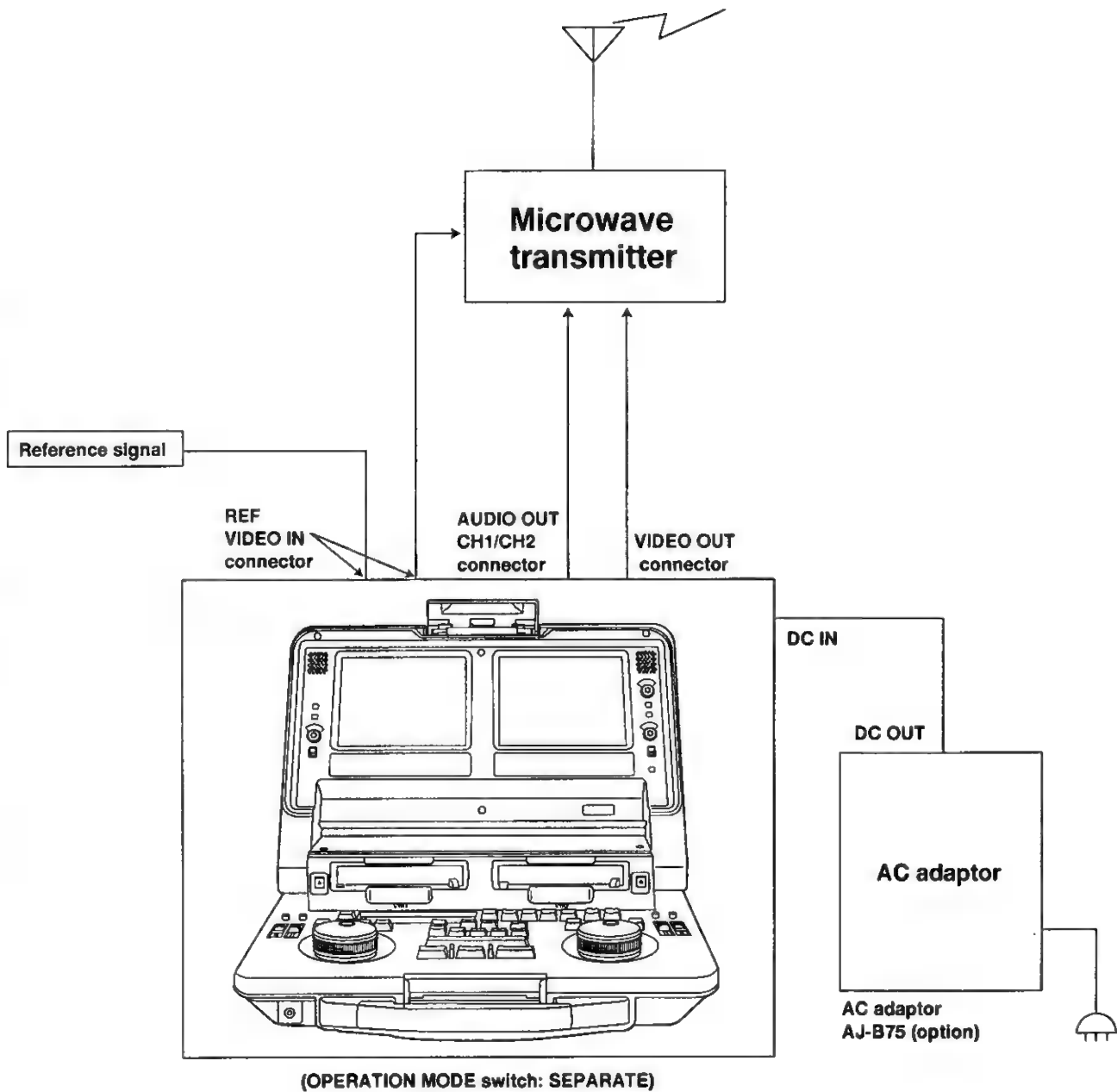
Cassette type	Description
Consumer-use DV cassette (S cassette)	This is exclusively designed for use in consumer-use cassette camera/recorder units. It can be used with the laptop for playback only if the AJ-CS750P cassette adaptor (option) is obtained. If a consumer-use cassette tape is to be used, it must first be loaded into the AJ-CS750P adaptor (optional accessory). <b>Use of Panasonic consumer DV cassette tapes is recommended.</b> Ensure that inserting such a tape directly without using the cassette adaptor may cause trouble.
M cassette	Recording/playback tape with a maximum length of 63 minutes (AJ-P12MP, AJ-P23MP, AJ-P33MP, AJ-P63MP)
L cassette	Recording/playback tape with a maximum length of 123 minutes (AJ-P64LP, AJ-P94LP, AJ-P123LP)

## <Precautions for playing back consumer-use DV tapes/DVCAM tapes>

- Consumer-use tapes can be used for playback only.
- Use tapes specially designed for DVCPRO applications with this unit. However, if DV tapes or DVCAM tapes are to be used in the playback mode, it is recommended that playback be limited to as short a period of time as possible.
- Tapes recorded in the LP mode cannot be played back.
- Since consumer-use tapes cannot be used for recording, the laptop's functions related to recording as well as its REC and other operations are disabled.
- Consumer tape FF/REW speed is VTR limited to  $\pm 32X$ . Slow motion playback is not possible with consumer cassette tape.
- In order to protect the tape, the maximum STILL TIMER for consumer tape is 10 seconds, and the available time for leaving the tape in STILL mode is set at 1 minute.
- The read disable display for the time code may sometimes appear while consumer-use tape is being used in the search, slow motion or still mode.

# SYSTEM CONNECTIONS

## Connections for transmission



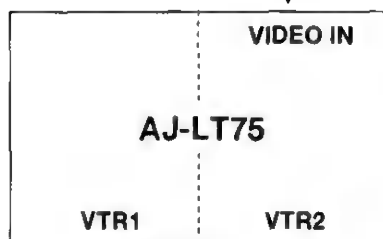
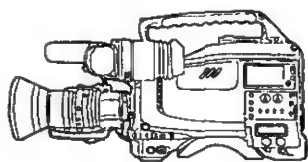
System connections

# SYSTEM CONNECTIONS

## System applications

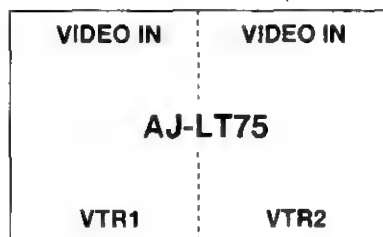
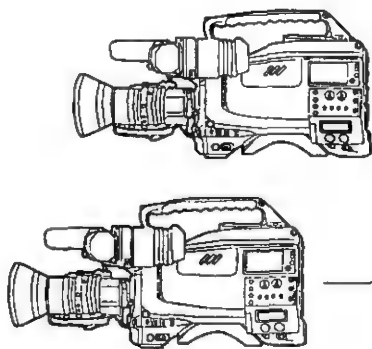
### ■ Backup recording using 2 VTRs

#### 1. Recording the same signal on 2 VTRs



Switch settings:  
OPERATION MODE : SEPARATE  
VTR1 IN SEL : V2 IN  
TC MODE : VTR1; User preference (P-REC, P-FREE)  
: VTR2; VTR1 TC  
(Time codes synchronized on both VTRs)

#### 2. Recording different signals on 2 VTRs

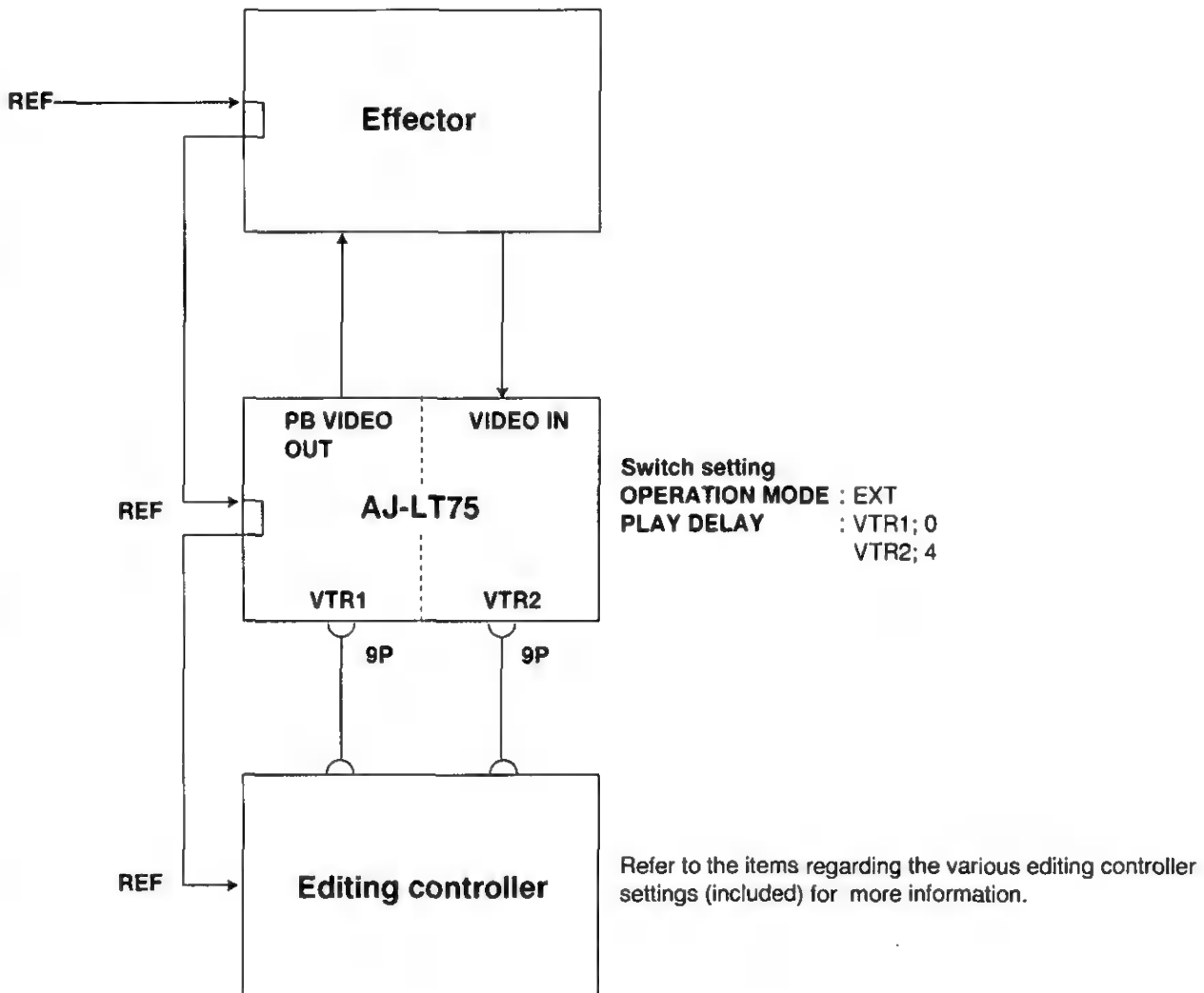


Switch settings:  
OPERATION MODE : SEPARATE  
VTR1 IN SEL : V1 IN  
TC MODE : VTR1; User preference (P-REC, P-FREE)  
: VTR2; VTR1 TC  
(Time codes synchronized on both VTRs)

# SYSTEM CONNECTIONS

## System applications

### ■ Using the unit with an external effector or controller switch settings



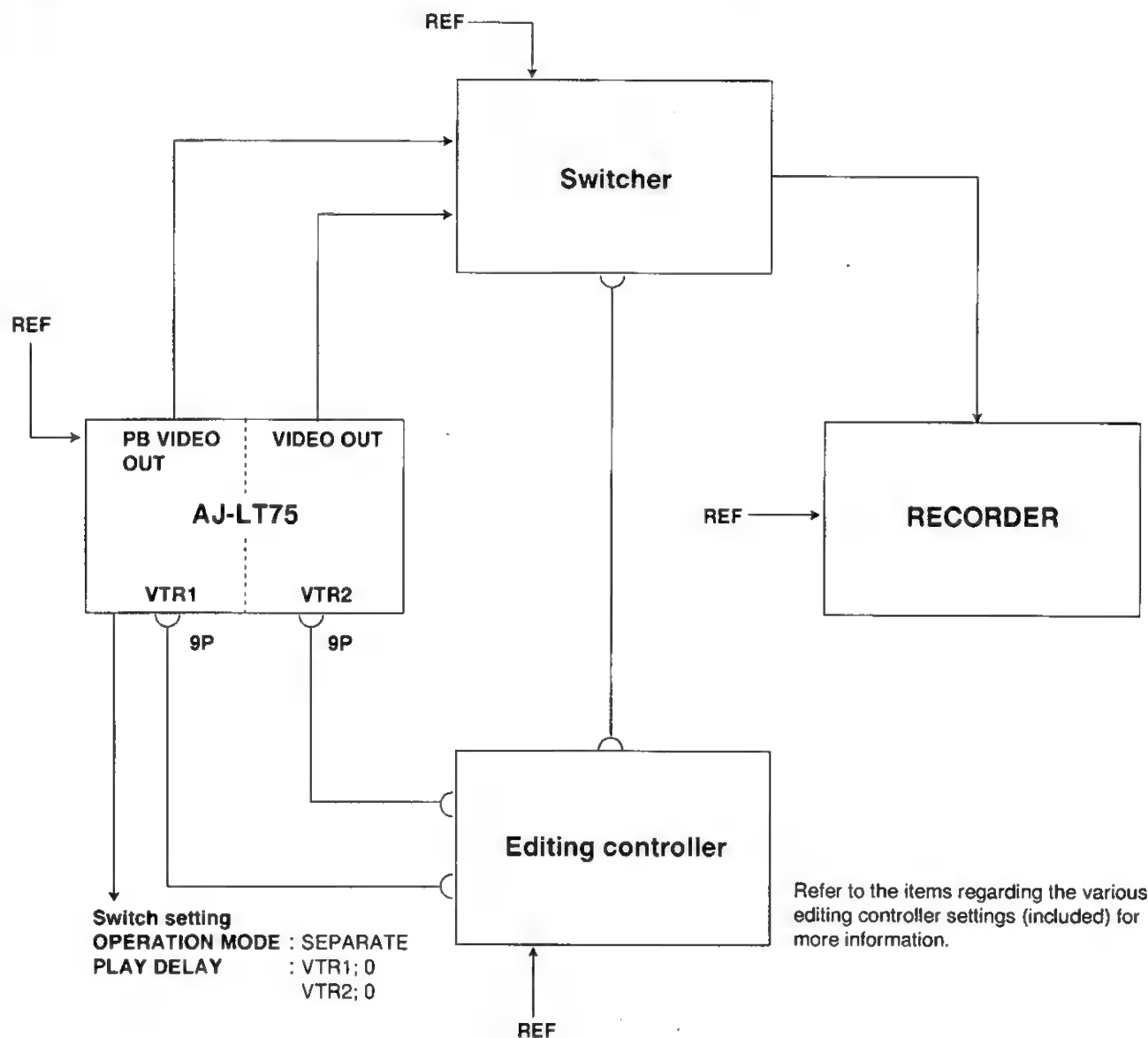
#### <Notes>

- VTR1 cannot be used as the editing recorder.
- Slow motion editing is not supported.

# SYSTEM CONNECTIONS

## System applications

### ■ Using two VTRs as source units for AB roll editing



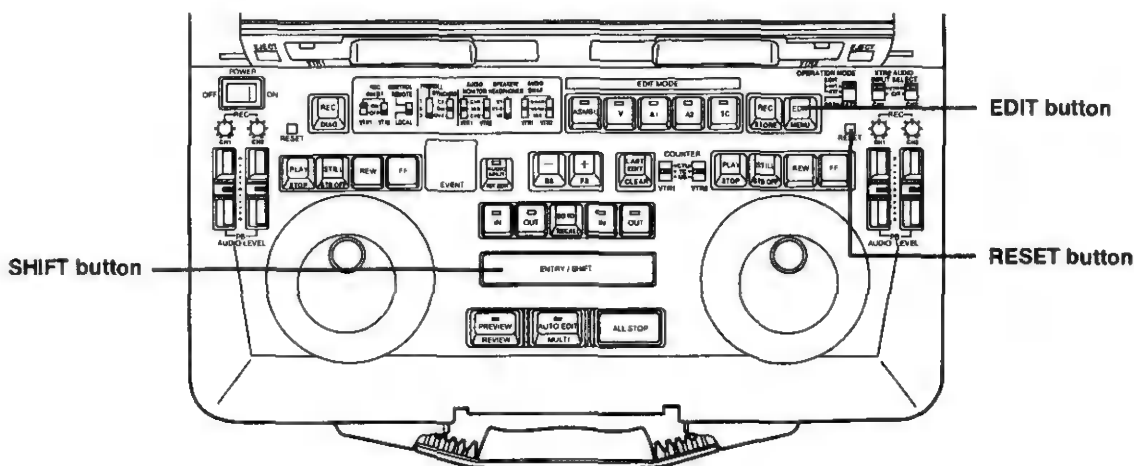
#### <Note>

Slow motion editing is not supported.

# SET-UP MENU OPERATIONS

The set-up of items other than those set using the selector switches are set on the on-screen menu using the time counter display and search dial.

To perform settings with the on-screen menu, press the MENU (SHIFT+MENU) buttons to establish the set-up mode. The setting contents now appear on the display, and the data settings are stored in the laptop's memory.



To transfer the laptop from the regular mode to the set-up menu mode, press the SHIFT and EDIT buttons together. (This cannot be done by remote control, or when editing or recording.)

## To change a setting:

- 1 Set the laptop to the jog mode.  
Remember that this procedure cannot be performed in the shuttle mode.
- 2 Turn the dial and select the item to be set. (The asterisk "\*" moves.)
- 3 While holding down the SHIFT button, turn the dial clockwise or counterclockwise to change the value.  
When the IN or OUT button is pressed while the SHIFT button is held down, the setting contents are decremented by IN and incremented by OUT.  
If the 1ST EDIT, TC PRESET or UB PRESET item is to be selected, operation moves to the column on the left or right by pressing the FF or REW button while the SHIFT button is held down.  
• "TC PRESET" and "UB PRESET" can be selected when set-up menu item No.507 (TC MODE) has been set to "P-REC" or "P-FREE."

## To view the menu page by page:

Press the FF or REW button.

Operation moves to the next page when the FF button is pressed; it moves to the previous page when the REW button is pressed. (The cursor moves to the first item in each group of 100.)

## To store a setting in the memory:

Press the REC button while the SHIFT button is held down.

## To return to the regular mode from the set-up menu mode:

Press the EDIT button while the SHIFT button is held down.

To return (reset) a setting which has been changed to the default setting, press the RESET button and one of the button below.

Press the REW button to cancel the resetting.

Press the PLAY button to reset all the items.

Press the STILL button to reset all the items except SYSTEM.

# DETAILED DESCRIPTION OF SET-UP MENUS

## BASIC

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
000	DISPLAY SEL	<u>0000</u> 0001	TIME <u>T&amp;STA</u>	This sets the contents of the MONITOR OUT connector and liquid-crystal monitor superimposed display. 0: Only the time is displayed. 1: Both the time and operation mode are displayed.	○	○
001	LCD SUPER	<u>0000</u> 0001	<u>OFF</u> ON	This selects the superimposed display on the liquid-crystal monitor. 0: A superimposed display does not appear on the monitor. 1: A superimposed display appears on the monitor.		○
002	CHARA TYPE	<u>0000</u> 0001	<u>WHITE</u> W/OUT	This selects the type of characters for the VIDEO MONI OUT connector superimposed display and set-up menu display, etc. 0: White characters appear on a black background. 1: White characters with black borders appear.	○	○
003	TAPE TIMER	<u>0000</u> 0001	<u>±12h</u> 24h	This selects whether the 12-hour or 24-hour time system is to be used for the CTL counter display. 0: The 12-hour time system is used for the display. 1: The 24-hour time system is used for the display.	○	○

The underlined number and item are the factory settings.



# DETAILED DESCRIPTION OF SET-UP MENUS

## OPERATION

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
100	SHTL MAX	0000 <u>0001</u>	X16 <u>X32</u>	This sets the maximum speed in the shuttle mode. 0: 16 times normal tape speed. 1: 32 times normal tape speed.	○	○
101	FF.REW MAX	0000 <u>0001</u>	X32 <u>X60</u>	This sets the maximum fast forward and rewind speed. 0: 32 times normal tape speed. 1: 60 times normal tape speed. <Note> With the DV format, this speed is 32X normal tape speed regardless of this setting.	○	○
102	AUDIO MUTE	0000 <u>0001</u>	OFF <u>ON</u>	This sets the status while audio signals are output when the mode has changed from STOP or search to PLAY. 0: The time taken until the sound is output is reduced. 1: The sound is output after the mode is fully established.	○	○
103	S/F/R/ EE SEL	0000 <u>0001</u>	EE <u>TAPE</u>	This sets whether to establish the EE mode or VV mode when the laptop is in the STOP, FF or REW mode. 0: EE mode is established. 1: VV mode is established.		○
104	STOP MODE	0000 <u>0001</u>	REC <u>PB</u>	This selects the mode when VTR1 is in the STOP mode. 0: The digital circuits serve as the REC system. The time taken entering REC mode is reduced. 1: The digital circuits serve as the PB system. The time taken entering PB mode is reduced.	○	
105	VTR1 IN SEL	0000 <u>0001</u>	V1 IN <u>V2 IN</u>	This selects whether V1 IN or V2 IN is to be used for the VTR1's video/audio input. 0: VTR1 IN serves to input the signals to VTR1. 1: VTR2 IN serves to input the signals to VTR1.	○	
106	FORMAT SEL	0000 <u>0001</u> 0002	DVCPRO DV DVCAM	This selects the format when an L size cassette is used. 0: DVCPRO mode 1: DV mode 2: DVCAM mode	○	○
107	POSTROLL SEL	0000 <u>0001</u> 0002 0003	0.5s <u>1s</u> 2s 3s	Selects the postroll time (in 1-second increments). 0: 0.5 sec. 1: 1 sec. 2: 2 sec. 3: 3 sec.		○

The underlined number and item are the factory settings.

Detailed description of set-up menus

# DETAILED DESCRIPTION OF SET-UP MENUS

## OPERATION

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
108	HUMID OPE	<u>0000</u> 0001	<u>OFF</u> ON	This selects whether condensation is to be ignored when it has formed and operation is to be continued. 0: Operation is disabled. 1: Operation is enabled. Although operation is still possible even when condensation has formed, the unit's operation cannot be guaranteed.  <Note> Since the tape may be damaged or other trouble may occur when "1: Operation is enabled" is selected, "0: Operation is disabled" is normally selected.		○
109	SEARCH ENA	<u>0000</u> 0001	<u>DIAL</u> KEY	This selects whether the direct search operation is to be performed. DIAL: Direct search mode KEY: No direct search mode (The search dial is operable in the STILL mode only.)		○
110	AUTO REW	<u>0000</u> 0001	<u>OFF</u> ON	This selects whether the tape is automatically rewound to the beginning when the end of the tape is detected in the PLAY, REC, or SHTL modes. 0: Transport stops at the end of the tape. 1: The tape is automatically rewound to the beginning.	○	○
111	ALL STOP SEL	<u>0000</u> 0001	<u>STOP</u> STILL	This is used to select the mode to which the unit is to be set when the ALL STOP button is pressed. 0: The unit is set to the STOP mode. 1: The unit is set to the still-picutre mode (SHTL +0.0, JOG STILL).		○

The underlined number and item are the factory settings.

# DETAILED DESCRIPTION OF SET-UP MENUS

## INTERFACE

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
200	ID SEL	<u>0000</u> 0001	<u>OTHER</u> DVCPRO	This selects the ID information which is to be returned to the controller. 0: 20 25H 1: The ID (F0 33H) unique to DVCPRO is returned.	○	○
201	LOCAL ENA	<u>0000</u> <u>0001</u>	<u>DIS</u> <u>ST&amp;EJ</u>	This selects the switches which can be operated on the front panel when the REMOTE/LOCAL switch is at REMOTE. 0: None of the switches or buttons can be operated. 1: Only the STOP (ALL STOP) and EJECT buttons can be operated.	○	○

The underlined number and item are the factory settings.

Detailed description of set-up menus

# DETAILED DESCRIPTION OF SET-UP MENUS

## EDIT

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
300	SERVO REF	<u>0000</u> 0001	<u>AUTO</u> EXT	This selects the signal with which the servo is synchronized. 0: During recording or editing, the servo is synchronized with the input signal; during playback, it is synchronized with the REF signal. 1: The servo is synchronized with the REF signal at all times.	○	○
301	PLAY DELAY	<u>0000</u> ..... <u>0004</u> ..... 0015	0 (VTR1) ..... 4 (VTR2) ..... 15	This sets the PLAY delay time in 1-frame increments.  <Note> When VTR1 or VTR2 is connected to the external unit and controlled from external source, set the PLAY DELAY setting value in accordance with the system connection.	○	○
302	AUD EDIT IN	<u>0000</u> <u>0001</u>	CUT <u>FADE</u>	This selects how the audio edit IN point is to be linked. 0: Cut processing 1: Fade processing		○
303	AUD EDIT OUT	<u>0000</u> <u>0001</u>	CUT <u>FADE</u>	This selects how the audio edit OUT point is to be linked. 0: Cut processing 1: Fade processing		○
304	BEEP	<u>0000</u> 0001 <u>0002</u>	OFF ENTRY <u>ALL</u>	This sets whether a confirmation beep is to be output. 0: No beep is output. 1: A beep is output with entries, errors and warnings. 2: A beep is output with entries, errors and warning and when an edit IN or OUT point is passed.		○
305	AUTO ENTRY	<u>0000</u> 0001 0002	OFF REC ALL	This sets whether the value of the previous edit OUT point is to be registered automatically as the next edit IN point after automatic editing. 0: Value is not automatically set. 1: Value is automatically set for VTR2 only. 2: Value is automatically set for both VTR1 and VTR2.		○
306	SV-UNLK EDIT	<u>0000</u> <u>0001</u>	EDIT <u>ABORT</u>	This selects whether to suspend editing when the servo lock does not engage. 0: Editing is not suspended. 1: Editing is suspended.		○

The underlined number and item are the factory settings.

# DETAILED DESCRIPTION OF SET-UP MENUS

## EDIT

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
307	SYNCHRO EDIT	<u>0000</u> <u>0001</u>	OFF <u>ON</u>	This sets whether to suspend editing when phase synchronization is not possible with a +/-0 frame accuracy while SYNCHRO is set to ON. 0: Phase synchronization is not suspended. 1: Phase synchronization is suspended.		○
308	SYNCHRO	<u>0000</u> 0001	<u>VTR1</u> VTR2	This selects the deck to be phase-synchronized. 0: VTR1 is phase-synchronized. 1: VTR2 is phase-synchronized.		○
309	EDL AUTO CLR	<u>0000</u> 0001	OFF <u>ON</u>	This sets whether the first edit is to be cleared and the subsequent edits can be overwritten when the maximum number of edits have been registered. 0: Edits cannot be overwritten. 1: Edits can be overwritten.		○
310	AFTER CUE-UP	<u>0000</u> 0001	<u>STOP</u> STILL	This selects the laptop's mode upon completion of a cue-up operation. 0: STOP mode 1: Still picture (SHTL+0.0, JOG STILL) mode		○
311	1ST EDIT DUR	<u>0000</u> 0001	<u>26s</u> T-END	This sets the black burst signal recording duration in the 1ST EDIT mode. 0: A black burst signal is recorded for 26 seconds, then the tape is rewound for 3 seconds and stops. The point at which the tape stops is set as the 1ST EDIT PRESET. 1: A black burst signal is recorded until the end of the tape or until the ALL STOP button is pressed. If the signal is recorded until the end of the tape, the tape is then rewound automatically to the 1ST EDIT PRESET position.		○
312	1ST EDIT			This sets the preset value in the first edit mode. 00:00:00:00 to 23:59:59:29		○

The underlined number and item are the factory settings.

Detailed description of set-up menus

# DETAILED DESCRIPTION OF SET-UP MENUS

## TAPE PROTECT

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
400	STILL TIMER	0000	0.5s	<p>This selects the time taken before the tape protection mode is established when the laptop has been left standing in the stop or search STILL (JOG/VAR/SHTL) mode. (Units: s: seconds min: minutes) &lt;Note&gt; In the case of the DV format, the time will remain at 10 seconds even if a value higher than 10 seconds has been selected. However, operation will last for up to 2 minutes on the selection screen.</p>	○	○
		0001	5s			
		0002	10s			
		0003	20s			
		0004	30s			
		0005	40s			
		0006	50s			
		0007	1min			
		<u>0008</u>	<u>2min</u>			
401	SRC PROTECT	<u>0000</u>	STEP HALF	<p>This selects the operation in the tape protection mode when the laptop has been left standing in the STILL mode. 0: STEP (STEP FWD in STILL mode) 1: Half loading &lt;Note&gt; When STEP FWD has been selected, operation is automatically transferred to half loading after the laptop has been left standing in the STILL mode for a total of 30 minutes with the DVCPRO format or for a total of 1 minute with the DV format.</p>	○	○
		0001				

The underlined number and item are the factory settings.

# DETAILED DESCRIPTION OF SET-UP MENUS

## TIME CODE

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
500	VITC POS-1	0000 <u>0006</u> 0010	10L <u>16L</u> 20L	This sets the position where the VITC signal is to be inserted. (The same line as that selected for 501:VITC POS-2 cannot be selected.)	○	○
501	VITC POS-2	0000 <u>0008</u> 0010	10L <u>18L</u> 20L	This sets the position where the VITC signal is to be inserted. (The same line as that selected for 500:VITC POS-1 cannot be selected.)	○	○
502	VITC BLANK	0000 <u>0001</u>	BLANK <u>THRU</u>	This sets whether the VITC data is to be output to the position which has been selected by 500:VITC POS-1 and 501:VITC POS-2. 0: VITC data is not output. 1: VITC data is output.	○	○
503	TCG REGEN	<u>0000</u> 0001 0002	<u>TC&amp;UB</u> TC UB	This selects the signal to be regenerated when the TCG is in the REGEN mode. 0: Both the time code and user bit are regenerated. 1: Only the time code is regenerated. 2: Only the user bit is regenerated.	○	○
504	BINARY GP	<u>0000</u> 0001 0002 0003 0004 0005 0006 0007	<u>000</u> 001 010 011 100 101 110 111	This sets the status for using the user bit of the time code generated by the TCG. 0: NOT SPECIFIED (character set is not used) 1: ISO CHARACTER (8-bit character set complying with ISO646 and ISO2022 is used) 2: UNASSIGNED-1 (not defined) 3: UNASSIGNED-2 (not defined) 4: UNASSIGNED-3 (not defined) 5: PAE/LINE (SMPTE262M page/line multiplexing system) 6: UNASSIGNED-4 (not defined) 7: UNASSIGNED-5 (not defined)	○	○
505	TCG CF FLAG	<u>0000</u> 0001	<u>OFF</u> ON	This selects whether the CF flag of the TCG is to be used. 0: CF flag is not used. 1: CF flag is used.	○	○
506	DF MODE	<u>0000</u> 0001	<u>DF</u> NDF	This selects the drop frame or non-drop frame mode for CTL and TCG. 0: For establishing the drop frame mode. 1: For establishing the non-drop frame mode.	○	○

The underlined number and item are the factory settings.

Detailed description of set-up menus



# DETAILED DESCRIPTION OF SET-UP MENUS

## TIME CODE

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
507	TC MODE	0000 0001 <u>0002</u> 0003 0004	P-REC P-FREE <u>I-REG</u> E-VITC VTR1 TC*	This selects whether the time code generated by the internal TCG or an external time code is to be used. 0: Internal TC is set to PRESET and used in the REC RUN mode. 1: Internal TC is set to PRESET and used in the FREE RUN mode. 2: Internal TC is used in the REGEN mode. 3: VITC of input video signals is used in the REGEN mode. 4: The time code of the sub-code is used in the REGEN mode when the OPERATION MODE switch is in the INT mode.	○	○
508	TC PRESET			This sets the TCG (time code generator) value. 00:00:00:00 to 23:59:59:29	○	○
509	UB PRESET			This sets the user bit value. 00 00 00 00 to FF FF FF FF	○	○
510	REGEN MODE	<u>0000</u> 0001 0002 0003	<u>AS&amp;IN</u> ASSEM INSRT SW	This sets the REGEN mode during assemble editing or time code (TC) insert editing (the mode for changing the time codes) if the "P-REC" or "P- FREE" setting has been selected from set-up menu item No. 507 (TC MODE). 0: REGEN takes place during assemble editing and insert editing. 1: REGEN takes place during assemble editing. 2: REGEN takes place during insert editing. 3: The setting of set-up menu item No. 507 (TC MODE) is followed. If the "P-REC" or "P-FREE" setting has been selected, recording is forced to take place from the PRESET value.		○

\*The VTR1 TC setting can be performed only for VTR2.

# DETAILED DESCRIPTION OF SET-UP MENUS

## VIDEO

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
600	INPUT C KILL	0000 <u>0001</u>	B/W <u>AUTO</u>	This selects the color killer processing for the video input signals. 0: B/W processing is conducted forcibly. 1: Automatic processing is conducted.	○	○
601	OUT VSYNC	<u>0000</u> 0001	<u>N-VE</u> VF	This selects whether the internal sync signal is to be floated so that H is aligned with the video output signal and V is aligned with the video input signal during EE. 0: Internal sync signal is not floated. 1: Internal sync signal is floated.		○
602	V-MUTE SEL	0000 <u>0001</u>	N-MUTE <u>LOW_RF</u>	This selects where the video signals are to be muted during playback under low RF conditions or when the servo lock is disengaged. 0: Signals are not muted. 1: Signals are muted.	○	○
603	CC (F1) BLANK	0000 <u>0001</u>	BLANK <u>THRU</u>	This selects ON or OFF for the closed caption signal in the first field. 0: Signal is forcibly blanked. 1: Signal is not blanked.	○	○
604	CC (F2) BLANK	0000 <u>0001</u>	BLANK <u>THRU</u>	This selects ON or OFF for the closed caption signal in the second field. 0: Signal is forcibly blanked. 1: Signal is not blanked.	○	○
605	FREEZE SEL	<u>0000</u> 0001	<u>FIELD</u> FRAME	This selects freeze for the still picture either during play or when operation is transferred from play to stop. 0: Field freeze 1: Frame freeze (Field freeze is set at all times when the laptop is in a mode other than the one mentioned above.)	○	○
606	IN FRM DET	0000 <u>0001</u>	FORCE <u>AUTO</u>	This selects frame detection for the input signals. 0: Frame detection is conducted at all times. 1: Frame detection is prohibited only with NON-STD signals.	○	○

The underlined number and item are the factory settings.

Detailed description of set-up menus

# DETAILED DESCRIPTION OF SET-UP MENUS

## AUDIO

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
700	CH1 IN LV	0000 <u>0001</u> 0002	4dB <u>0dB</u> -20dB	This selects the audio input (CH1) reference setting.	○	○
701	CH2 IN LV	0000 <u>0001</u> 0002	4dB <u>0dB</u> -20dB	This selects the audio input (CH2) reference setting.	○	○
702	CH1 OUT LV	0000 <u>0001</u> 0002	4dB <u>0dB</u> -20dB	This selects the audio output (CH1) reference setting.	○	○
703	CH2 OUT LV	0000 <u>0001</u> 0002	4dB <u>0dB</u> -20dB	This selects the audio output (CH2) reference setting.	○	○
704	EMPHASIS	<u>0000</u> 001	<u>OFF</u> ON	This sets the emphasis to ON or OFF.	○	○
705	REC CUE	0000 0001 <u>0002</u>	CH1 CH2 <u>CH1+2</u>	This selects the input signal to be recorded for CUE. 0: Audio input CH1 signal 1: Audio input CH2 signal 2: Audio input CH1 and CH2 mixed signal	○	○
706	CUE INSERT	<u>0000</u> 0001	<u>OFF</u> ON	This selects whether CUE is to be inserted during AUDIO INSERT. 0: CUE is not inserted and pre-recorded signals are left. 1: CUE is inserted.		○

The underlined number and item are the factory settings.

# DETAILED DESCRIPTION OF SET-UP MENUS

## AUDIO

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
707	DV OUTPUT	<u>0000</u> 0001 0002	<u>ST1</u> ST2 ST1+2	This selects the audio CH1 and CH2 outputs during DV format playback. 0: The CH1 track is output for CH1 and CH2 track for CH2. 1: The CH3 track is output for CH1 and CH4 track for CH2. 2: The CH1 and CH3 tracks are mixed and output to CH1, and the CH2 and CH4 tracks are mixed and output to CH2.	○	○
708	PB FADE	<u>0000</u> 0001 0002	<u>AUTO</u> CUT FADE	This selects how the audio edit points (IN, OUT) are to be processed during playback. 0: Processing accords with status during recording. 1: Forced cut editing 2: Forced fade editing	○	○
709	AUDIO SLOW	0000 <u>0001</u> 0002 <u>0003</u>	CUE PCM DIRPCM <u>AUTO</u>	This sets the audio output mode during slow playback. 0: Forced cue mode 1: PCM mode 2: Intermittent PCM mode 3: AUTO mode  <Note> When "0: Forced cue mode" or "1: PCM mode" is selected, the video and audio timing may be off by several frames.	○	○
710	SHTL AUDIO	<u>0000</u> 0001	<u>OFF</u> CUE	This selects whether the cue audio is to be output to LINE OUT in the shuttle mode. 0: Cue audio is not output. 1: Cue audio is output.	○	○
711	AUTO MONI	<u>0000</u> 0001	<u>V1+V2</u> AUTO	This selects the signal to be output to the speaker/headphone. 0: Processing accords with the SPEAKER/HEADPHONES switch. 1: The signal of the VTR operated last is output.  <Notes> • If the OPERATION MODE switch set to the "SEPARATE" position, output is fixed at "V1 + V2." • If the CONTROL switch set to the "REMOTE" position, output is fixed at "V1 + V2."		○
712	DV PB ATT	<u>0000</u> 0001	<u>OFF</u> ON	This selects the output level while a DV tape is being played back. OFF: Output level is not reduced. ON: Output level is reduced.	○	○

The underlined number and item are the factory settings.

Detailed description of set-up menus

# DETAILED DESCRIPTION OF SET-UP MENUS

## SYSTEM

Item		Setting		Description of setting	V T R 1	V T R 2
No.	Item	No.	Item			
800	SCH COARSE	<u>0000</u> 0001 0002 0003	<u>0</u> 90 180 270	SCH phase adjustment: in 90-degree units (SCH changes; H phase does not change.)	○	○
801	SCH FINE	0000 <u>0128</u> 0225	-128 <u>0</u> 127	SCH phase adjustment: total variable range of +/-45 degrees or more (SCH changes; H phase does not change.)	○	○
802	LCD CONT	0000 <u>0030</u> 0060	-30 <u>0</u> 30	This adjusts the LCD contrast.	○	○
803	LCD COLOR	0000 <u>0030</u> 0060	-30 <u>0</u> 30	This adjusts the LCD color.	○	○
804	LCD HUE	0000 <u>0030</u> 0060	-30 <u>0</u> 30	This adjusts the LCD hue.	○	○

The underlined number and item are the factory settings.

# PREPARATION OF EDITING TAPE

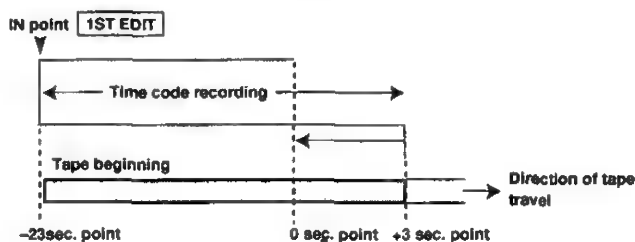
The preparation of the tape for editing differs depending on whether assemble or insert editing is to be performed. A color bar or black burst signal must be supplied to the recorder, and the control signal (CTL) must be recorded on the tape before any attempt is made to edit. The CTL is recorded beforehand using a signal generator, for instance.

**For assemble editing**, the control signal is recorded at the start of the editing tape. (1st edit)

- 1 Press the IN button while holding down the ENTRY button to register the IN point of VTR2.

The registered position is set 23 seconds before the time which is set by the 1ST EDIT preset value. When the 1ST EDIT (SHIFT+AUDIO SPLIT) buttons are then pressed, recording commences, recording proceeds up to a point 3 seconds beyond the IN point, and the tape is automatically rewound to the 0-second point where it stops.

When the first edit function is used, black burst signals are always recorded as the video signals and the sound is muted.



**For insert editing**, the control signal must be recorded from the start to the end of the editing tape.

- If the T-END setting is selected for set-up menu item No. 311 (1ST EDIT DUR), 1ST EDIT operation continues to the end of the tape or until the ALL STOP button is pressed. (Black burst and time code signals are recorded.)

**To record the time code together with the video signals onto a new tape:**

- 1 Insert the tape into the recorder.
- 2 While holding down the SHIFT button, press the MENU button to establish the set-up mode.
  - 1) Select set-up item No.507 (TC MODE), and set it to P-REC (0000).
  - 2) Select set-up item No.508 (TC PRESET), and set the default value of the time code.\*
  - 3) Select set-up item No.506 (DF MODE), and set the drop frame or non-frame mode.

\*To reset the time code to "0," press the RESET button while pressing the SHIFT button.

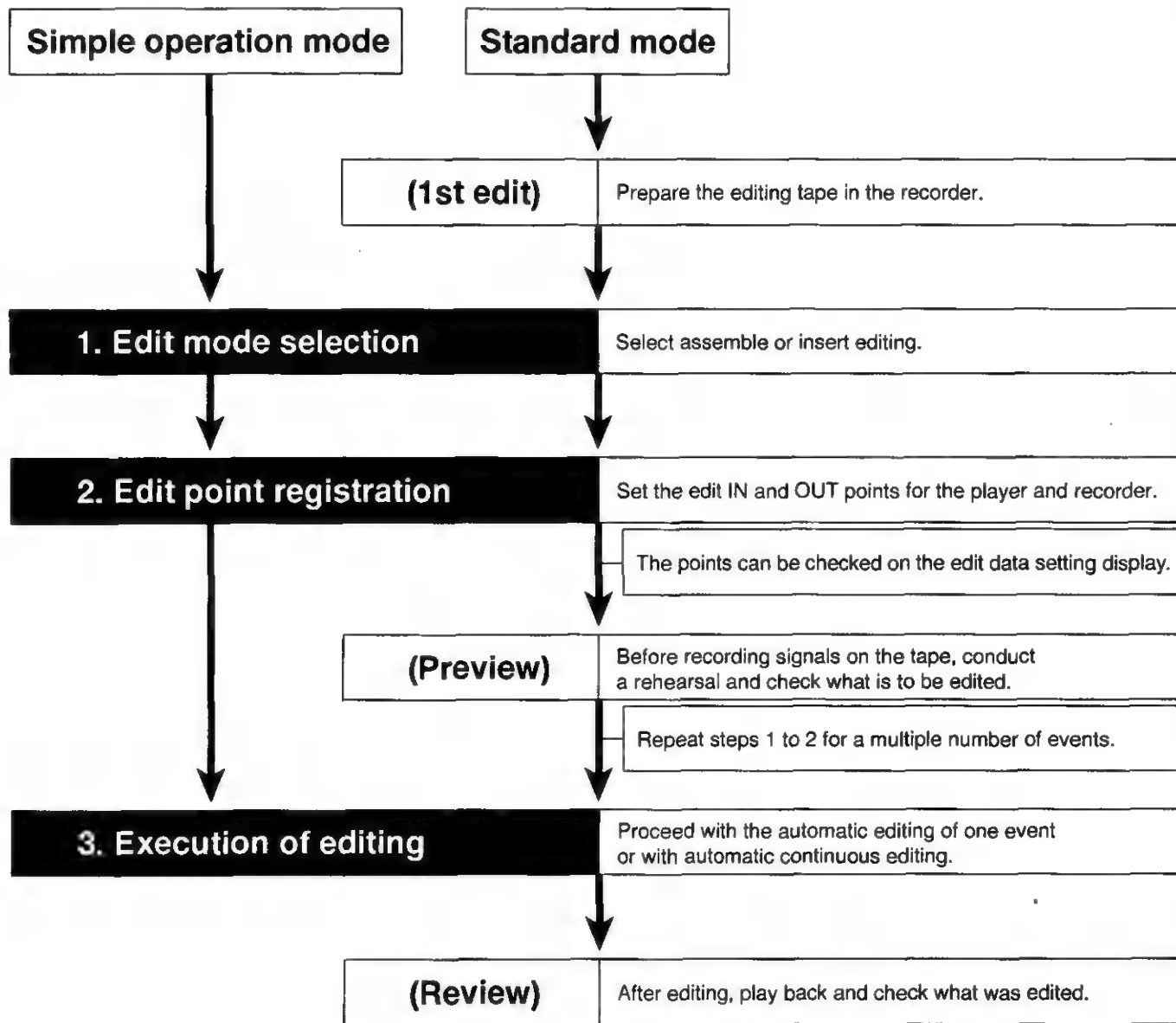
- 3 Record the time code.

When recording the time code onto a new tape, press the PLAY button while holding down the recorder's REC button.

- 4 Press the ALL STOP button to stop the recording.

# BASIC FLOW OF EDITING OPERATIONS

Editing operations basically involve the following steps.

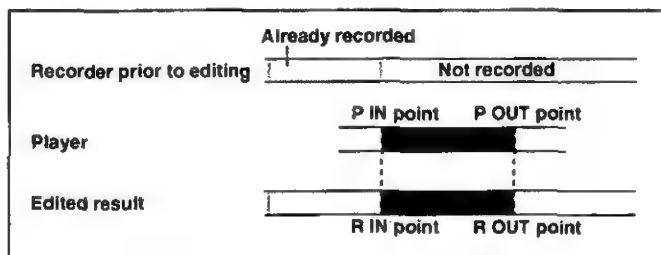




# TYPES OF EDIT MODES AND ILLUSTRATIONS

## ■ Assemble edit mode

Signals are recorded continuously and successively from the start of usually a new tape (used tapes can also be used). This is the mode commonly used to make master tapes.

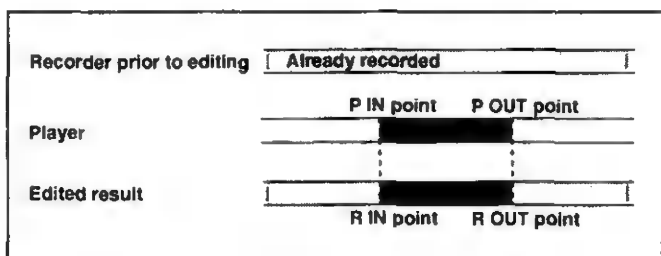


- In order to maintain the continuity of the time codes on the tape in the recorder, set set-up menu item No. 507 (TC MODE) to "I-REG". When the setup menu No.507 is set to "P-REC" or "P-FREE", set set-up menu item No. 510 (REGEN MODE) to "AS&IN" or "ASSEM."

## ■ Insert edit mode

A different source is recorded on part of a pre-recorded tape.

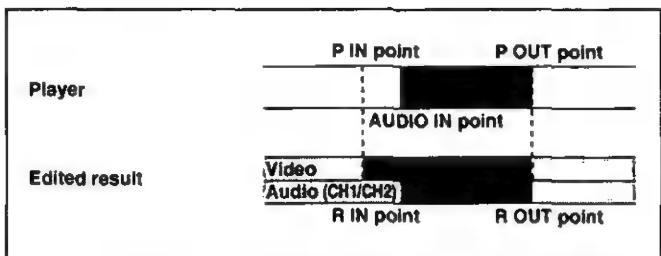
Four types of signals—V (video), A1 (audio CH1), A2 (audio CH2) and TC (time code)—can be recorded separately or altogether. The signals must be recorded on the recorder's tape from beginning to end.



- If it is necessary to maintain the continuity of the time codes on the tape in the recorder during TC insertion, set set-up menu item No. 507 (TC MODE) to "I-REG". When the setup menu No.507 is set to "P-REC" or "P-FREE", set set-up menu item No. 510 (REGEN MODE) to "AS&IN" or "INSRT."

## ■ Audio split editing

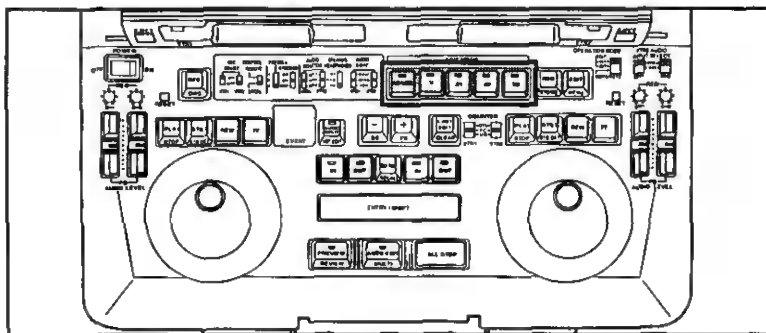
A technique which offsets the audio edit points can be used.



It is also possible to place the audio IN point ahead of the video IN point.

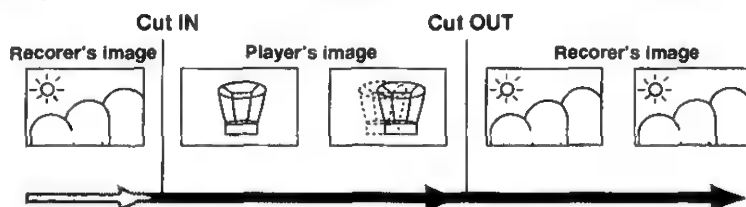
# CUT EDITING PROCEDURE

## 1. Edit mode selection



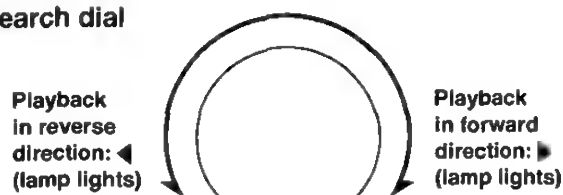
- ① **For assemble editing:** Press the assemble (ASMBL) button. Record the video, audio (CH1, CH2) and time code simultaneously.
- ② **For insert editing:** Press the insert buttons (V, A1, A2 and TC). These buttons correspond respectively to the video and audio signals. Press all the buttons for the signals which are to be edited.
- ③ To clear a mode, press the same button again.

Cut editing is a way of editing which uses a method to switch in an instant from one screen to another.



- \* With insert editing, the images and sound can be edited separately.

### Search dial

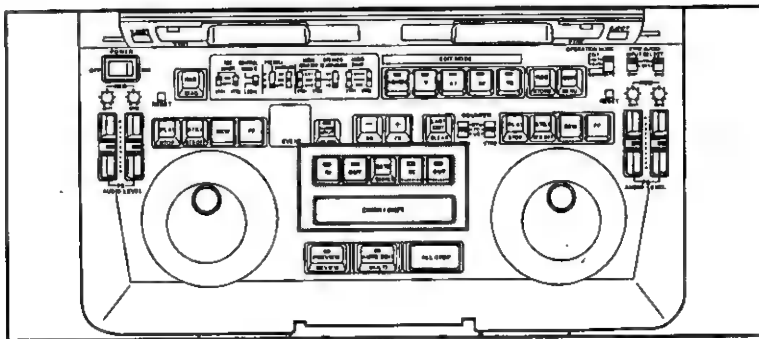


- Turning the dial without pressing it establishes the shuttle mode: depending on the direction in which the dial is turned and the angle to which it has been turned, a tape can be played back across a range from 16 or 32 times faster than the normal tape speed in the forward direction to 16 or 32 times faster than the normal tape speed in the reverse direction (according to the set-up menu item No.100 setting). A still picture is produced at the center click-stop position (natural stop position).
- Pushing the dial in and turning it establishes the jog mode: depending on the direction in which the dial is turned and the speed at which it is turned, a tape can be played back across a range from 1 times faster than the normal tape speed in the forward direction to 3 times faster than the normal tape speed in the reverse direction. A still picture is produced when the dial is no longer turned.

# CUT EDITING PROCEDURE

## 2. Edit point registration

Search the scene to be edited using the search dial, and register the edit IN and OUT points using the IN and OUT buttons.



- 1 Play back the tape on the VTR (player or recorder) which is to be used to setting the edit points, and search the desired scene.
- 2 While holding down the ENTRY button at the desired scene, press the IN or OUT button corresponding to the edit point which is to be set.  
Depending on the edit point now set, the IN or OUT LED lights on the time counter display of the player or recorder. At the same time, if an edit point is not registered, the corresponding LED flashes.
- 3 Repeat steps 1 and 2 until three of the four IN and OUT points (two for the player and two for the recorder) have been set. The edit point registration is completed once the player's IN and OUT points and the recorder's IN point are set. The recorder's OUT point is automatically calculated when editing is executed.

### To produce a still picture of the desired scene:

**During normal playback:** press the STILL button.

**During playback in the shuttle mode,** return the search dial to the center clickstop position.

**During playback in the jog mode,** stop turning the search dial.

### When still picture playback continues beyond a specific period of time:

When the time set in set-up menu item No.400 (STILL TIMER) has elapsed, operation is automatically transferred to the tape protection mode.

# CUT EDITING PROCEDURE

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## Edit point checking, revising and clearing

### To check the edit points:

Press the IN or OUT button of the VTR on whose tape the edit points are to be checked. The registered edit point now appears on the counter display.

### To check the edit point image:

Press together the IN or OUT button and GO TO button of the VTR on whose tape the image of the edit points is to be checked. The VTR accesses the registered edit point, and its image appears on the monitor.

- If the VTR does not access the edit point, it means that the edit point has not been registered.

### To check the total time:

**To check the total time of each edit**, press the IN and OUT buttons together. The edit time now appears on the counter.

**To check the total time of the entire editing**, press the TOTAL button.

The total time is displayed while this button is held down.

### To revise an edit point in 1-frame increments

Press the "+" or "-" button while holding down the IN or OUT button.

The "+" button increases the registered edit point in 1-frame increments.

The "-" button decreases the registered edit point in 1-frame increments.

### To clear an edit point

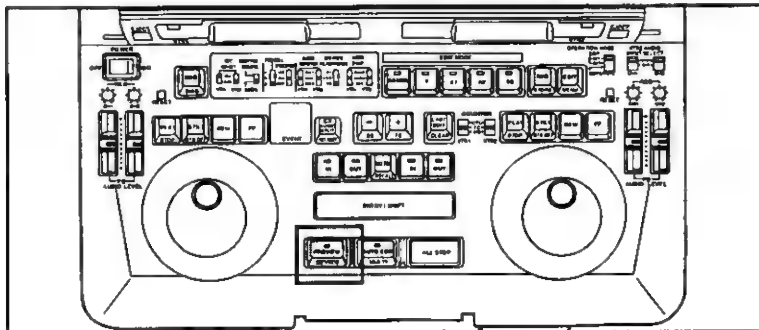
Press the corresponding RESET button while holding down the IN or OUT button of the edit point which is to be cleared.

# CUT EDITING PROCEDURE

## (Preview)

Rehearsal playback before proceeding with editing

When the PREVIEW button is pressed, the event just registered (event whose number appears on the display) will be previewed.



### When preview is executed:

- The recorder's images are played back from the recorder's preroll point to the IN point and from the OUT point onward.
  - The images to be edited from the IN point to OUT point appear on the recorder's monitor.
  - The tapes in both the player and recorder travel as far as a point 2 seconds after the OUT point and stop.
- In the assemble mode, the tape in the recorder travels as far as a point 1 second after the IN point and stops while the recorder's images are not played back even when the player's tape passes the OUT point.

### To start preview again from the beginning while preview is in progress:

Press the PREVIEW button.

### To reset the OUT point more toward the tape beginning while preview is in progress:

Press the recorder OUT button while holding down the ENTRY button at the scene where the OUT point is to be registered.

- In the insert mode, the recorder's tape position where the above two buttons were pressed is now registered as the new OUT point, and preview is concluded.
- In the assemble mode, the new OUT point is automatically calculated and registered.

### To suspend preview and execute automatic editing:

Press the AUTO EDIT button.

### To recall the contents of the previous preview:

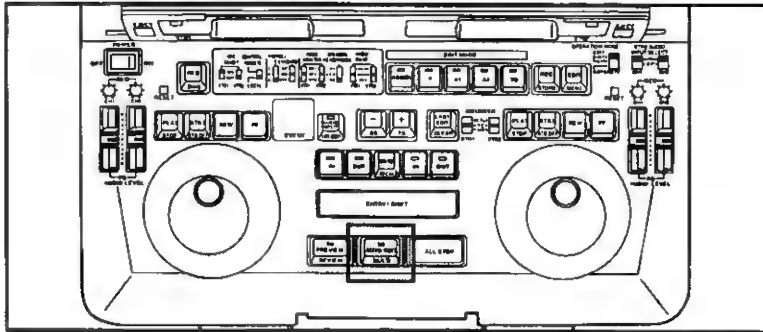
Press the LAST EDIT button.

Each time this button is pressed, the contents of the current preview and the previous preview are toggled.

# CUT EDITING PROCEDURE

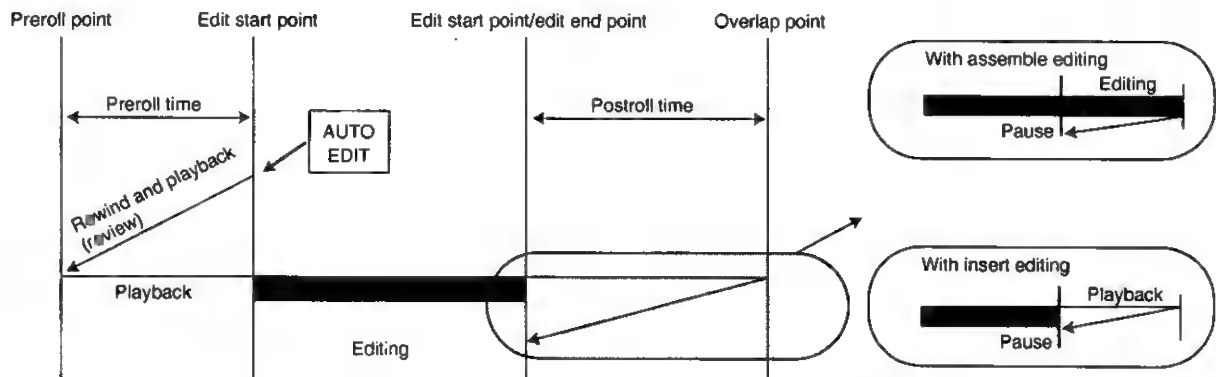
## 3. Editing execution

Once the necessary edit point settings have been registered, one event will be automatically edited if editing is now performed. After editing has been performed, what has been edited can be checked using the "review" function.



**<Editing execution>** (With continuous automatic editing, input the next event without executing editing.)

When the AUTO EDIT button is pressed, the automatic editing of one event is commenced.

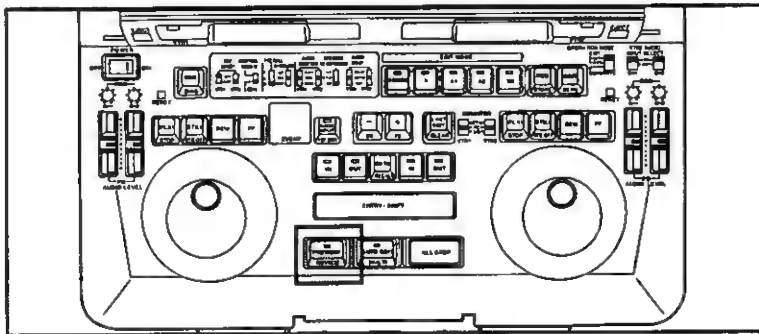


- \* After editing has been executed, the EVENT No. is added, and what has been the recorder's edit OUT point is automatically calculated as the edit IN point. [However, this is only when an automatic setting is used for set-up menu item No.305 (AUTO ENTRY).]
- \* To end editing at any time, press the AUTO EDIT button. The position where the button was pressed is registered as the OUT point.

# CUT EDITING PROCEDURE

## (Review)

When the REVIEW (SHIFT+PREVIEW) button is pressed, already edited event is played back.



To suspend the review, press the ALL STOP button.

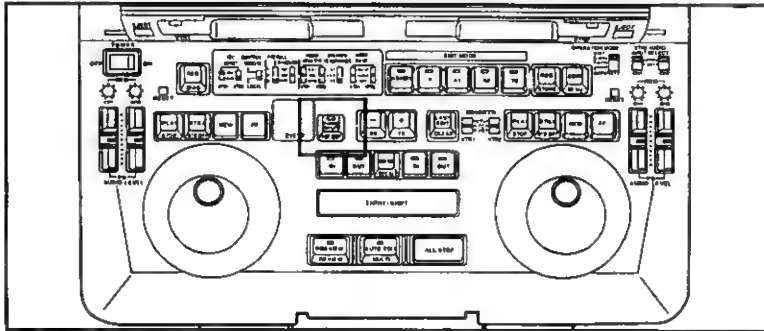
### <Note>

Review can be performed immediately after editing is completed. Note that review cannot be performed if the unit is transferred to another mode or if one of its function buttons is pressed.

# AUDIO SPLIT EDITING PROCEDURE

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In the insert edit mode, the audio IN point can be offset from the video IN point for editing.



- 1 Select the channel for insert editing.
- 2 Register the video edit IN points of the player and recorder.
- 3 Press the AUDIO SPLIT button. Check that its lamp has lighted. The IN lamps on the time counters of the player and recorder flash.
- 4 Search the player's audio IN point, and press the player's IN button while holding down the ENTRY button. Once the IN point has been registered, the IN lamp has lighted.
- 5 Press the AUDIO SPLIT button. The AUDIO SPLIT lamp flashes.
- 6 Register the OUT point of the player or recorder.
- 7 Press the PREVIEW button to preview the points.
- 8 Press the AUTO EDIT button.

## Revising an edit IN point

Check that the AUDIO SPLIT lamp has lighted, and repeat steps 4 and 5.

## Displaying the audio split amount

Press the IN and OUT buttons together while the AUDIO SPLIT lamp is lighted. The difference between the audio split IN point and video IN point is displayed on the time counter.

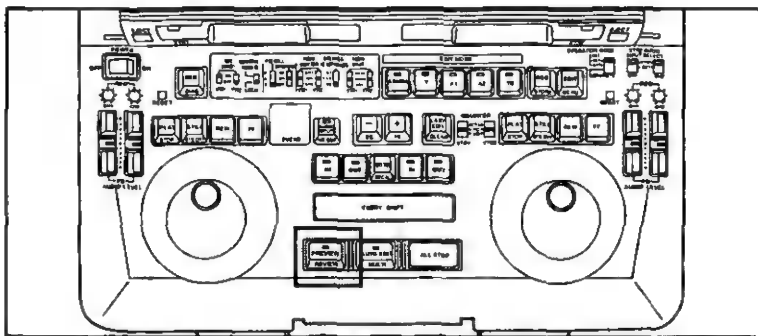
While the AUDIO SPLIT lamp is lighted, the audio split IN and video OUT points cannot be revised simultaneously by pressing the "+" or "-" button.

### <Note>

If the AUDIO SPLIT lamp flashes, it means that the audio split IN point has been registered.



## EDITING BY EDIT IN POINT SETTING ONLY



- 1 Search the edit IN points of the player and recorder.
- 2 Press the PREVIEW button.  
The position where the button was pressed is registered as the IN point, and this point is previewed.
- 3 Press the recorder's OUT button while holding down the ENTRY button at the OUT point position.  
The OUT point is registered and the player and recorder stop in about 1 second in the assemble edit mode while and in about 2 seconds in the insert edit mode.
- 4 Press the AUTO EDIT button.  
Editing now commences.

### When executing editing without preview

Press the AUTO EDIT button instead of the PREVIEW button in step 2. At the position where editing is to be completed, press the AUTO EDIT button.

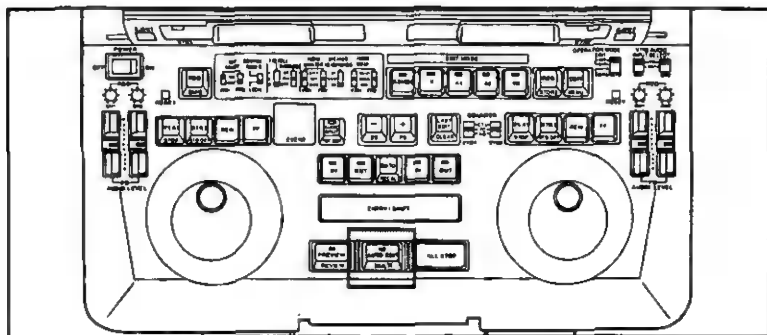
## STILL PICTURE EDITING

- 1 Register the IN point and OUT point of the player (VTR1) as the same point.
  - These points can be registered as the same point by simultaneously pressing the IN button, OUT button and SHIFT/ENTRY button of the player (VTR1).
- 2 Set and register both the IN point and OUT point of the recorder (VTR2).
  - Open-ended execution is possible even when the IN point alone is registered.
- 3 Press the AUTO EDIT button to execute editing.  
The still picture of the player (VTR1) at the point registered in step 1 is now edited.

### <Note>

The still picture editing can be operated only when the OPERATION MODE switch is set to "INT."

# AUTO TAG EDITING



Scenes can be edited in succession simply by registering the player's edit IN point.

Since the recorder's tape is stopped at the edit OUT point, editing can be conducted merely by registering the player's edit IN point.

- 1 Set set-up item No.305 (AUTO ENTRY) to REC.
- 2 When the editing is completed, search the player's IN point.
- 3 Press the AUTO EDIT button.  
Editing now commences.
- 4 At the edit OUT point, press the AUTO EDIT button.  
Editing is now completed.

## TRACK FUNCTION

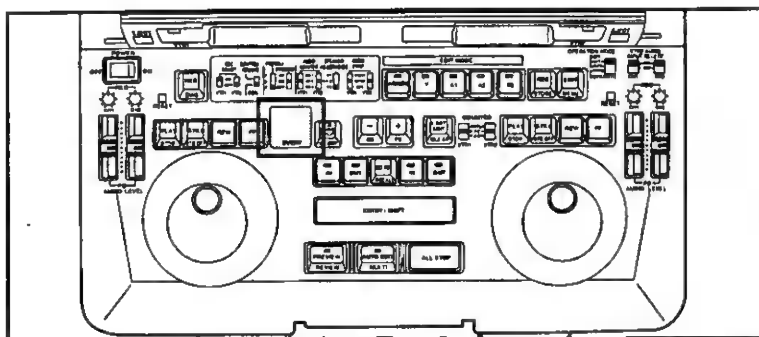
This function efficiently sets the player's edit points in accordance with any change which is made in the recorder's edit IN point.

- 1 Change the IN point of the recorder (VTR2).
  - 2 Press the FF button on VTR1 while holding down the SHIFT button.
    - The IN point of the player (VTR1) is automatically changed in accordance with the change made in step 1.
    - The colon (:) between the hours and minutes of the on-screen counter changes to a dot (.) to indicate that the track mode is now established.
- 01:23:45:01 → 01.23:45:01  
↑ Normal mode    ↑ Track mode
- The TC (UB or CTL) display on the display tube flashes to indicate that the track mode is now established.
- 3 When the IN point of recorder (VTR2) is changed in the track mode, the IN point of the player (VTR1) is also automatically changed. When an edit point of the player (VTR1) is next changed, the track mode is released, and the normal mode is restored.

### <Note>

When "ALL" is selected for the set-up menu item No. 305 (AUTO ENTRY) setting, the IN point of the player (VTR1) will always be changed in accordance with the change made in the IN point of the recorder (VTR2) even when the track mode is not established manually.

# EVENT EDITING



\*When event editing is performed in the CTL mode, the error may accumulate causing the edit points to deviate considerably. It is therefore recommended that event editing be performed in the TC mode.

## Registering events

Events are registered in sequence from event No.01 to 99, 00.

### How to register events

- **Auto editing**  
Press the AUTO EDIT button.  
After editing has been executed, the numbers are automatically incremented by 1.
- **Registering an event without executing editing**  
Press the STORE (SHIFT+REC) buttons.  
The event numbers are incremented by 1.

### When an unregistered event number (displayed as "n") is registered:

The next event number is displayed.

- When an event number is accessed and the edit data is revised, the data which has been revised is registered in the event number concerned.
- When an event is accessed and editing is executed without further ado, the event number remains unchanged.

### When "00" appears as the event number:

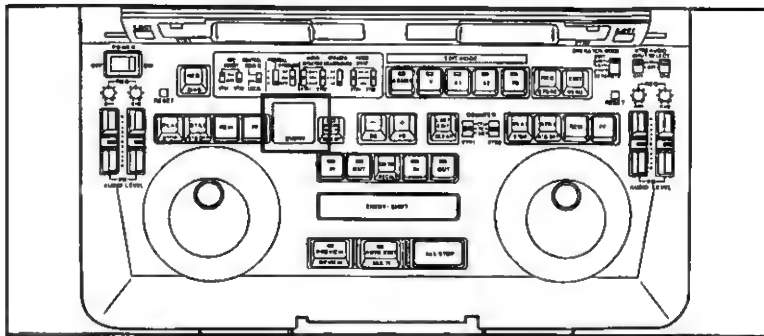
This signifies the one hundredth event.

The overwrite mode (all clear) or overwrite prohibited mode is established depending on the EDL auto clear setting (set-up item No.309 "EDL AUTO CLR").

- **When EDL AUTO CLR is OFF**  
The overwrite prohibited mode is established.  
"FULL" appears instead of the event number. When any function button is pressed, the event number is returned to "00" and the status which results when the edit data for event No.00 is accessed is established.
- **When EDL AUTO CLR is ON**  
The overwrite mode is established.  
The event number appears as "n00," and the registered edit data is cleared. A new event can now be registered.

# EVENT EDITING

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## Calling an event

An event registered in the EDL can be accessed.

- **Access an event by designing its event number**
- **Accessing an event prior to the edit now displayed**

Press the BS (SHIFT+"-") buttons.

The last edit is now accessed. To access the desired edit, keep pressing the buttons.

When set-up item No.309 ("EDL AUTO CLR") is set to ON, event No. "00" is accessed if the event has been overwritten for event numbers exceeding "01."

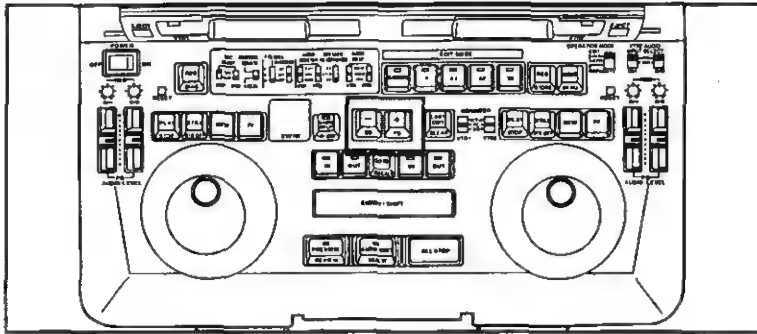
- **Accessing the event ahead of the edit now displayed**

Press the FS (SHIFT+"+") buttons.

To access the desired edit, keep pressing the buttons.

When set-up item No.309 ("EDL AUTO CLR") is set to ON, event No. "00" is accessed if the event has been overwritten for event numbers exceeding "01."

# EVENT EDITING



## Revising and clearing events

The edit data of registered events can be revised or cleared and cleared events can be restored.

### • Accessing a registered event and revising its data

- 1 Press the BS (SHIFT+"-") or FS (SHIFT+"+") buttons.  
When the desired event is displayed, revise its data.
- 2 Press the STORE (ENTRY+REC) buttons.

### • Clearing an event

- 1 Press the BS (SHIFT+"-") or FS (SHIFT+"+") buttons.  
When the desired event is displayed, revise its data.
- 2 Press the CLEAR (SHIFT+LAST EDIT) buttons.  
"d" now appears in front of the event.

An event accompanied by "d" can be previewed but it cannot be edited or re-registered.

### • Restoring a cleared event

- Press the RECALL (SHIFT+Go To) button.  
"d" in the event number is cleared.

## Clearing all the events (initializing the EDL)

Press the CLEAR (SHIFT+LAST EDIT) and ALL STOP buttons.  
"n01" appears and the data of all the events is cleared.

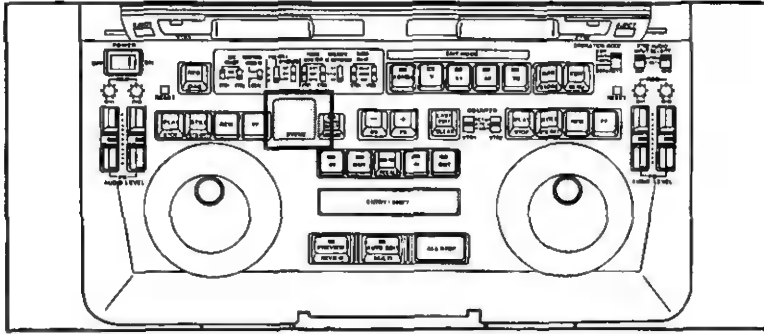
### <Note>

When all the events are cleared, they cannot be restored to their original condition.

## Executing event editing

- 1 Press the MULTI (SHIFT+AUTO EDIT) buttons.  
Starting with the event whose number is displayed, the events are now edited on the basis of the registered edit data.
- 2 To stop the editing at any time, press the ALL STOP button.  
To resume editing, press the MULTI (SHIFT+AUTO EDIT) buttons.  
To execute editing from a particular event, return to the number of that event.

# EDIT DATA MANAGEMENT (EDL)



The registered edit data can be managed collectively in the form of an edit decision list (EDL). Edit data managed by numbers can be accessed as and when necessary. The EDL is retained after the power has been turned off.

A maximum of a hundred edits can be managed inside the laptop and accessed as desired. Their data can be changed or cleared.

## Displaying event numbers

Event numbers are displayed using two digits.

n35

"n": New edit data which has not been registered in the EDL

"d": Edit data which has been cleared from the EDL

## Calling the previously previewed contents

Use the last edit function.

Two sets of edit data prior to the current edit number can be accessed.

Press the LAST EDIT button.

Each time this button is pressed, the current edit data and the previously edited data at the time of preview are accessed.

- If preview has been conducted only once, only one set of edit data is accessed. Furthermore, the last edit function does not work if the preview function has not been used at all.

## Clearing all the events (initializing the EDL)

Press the CLEAR (SHIFT+LAST EDIT) and ALL STOP buttons.

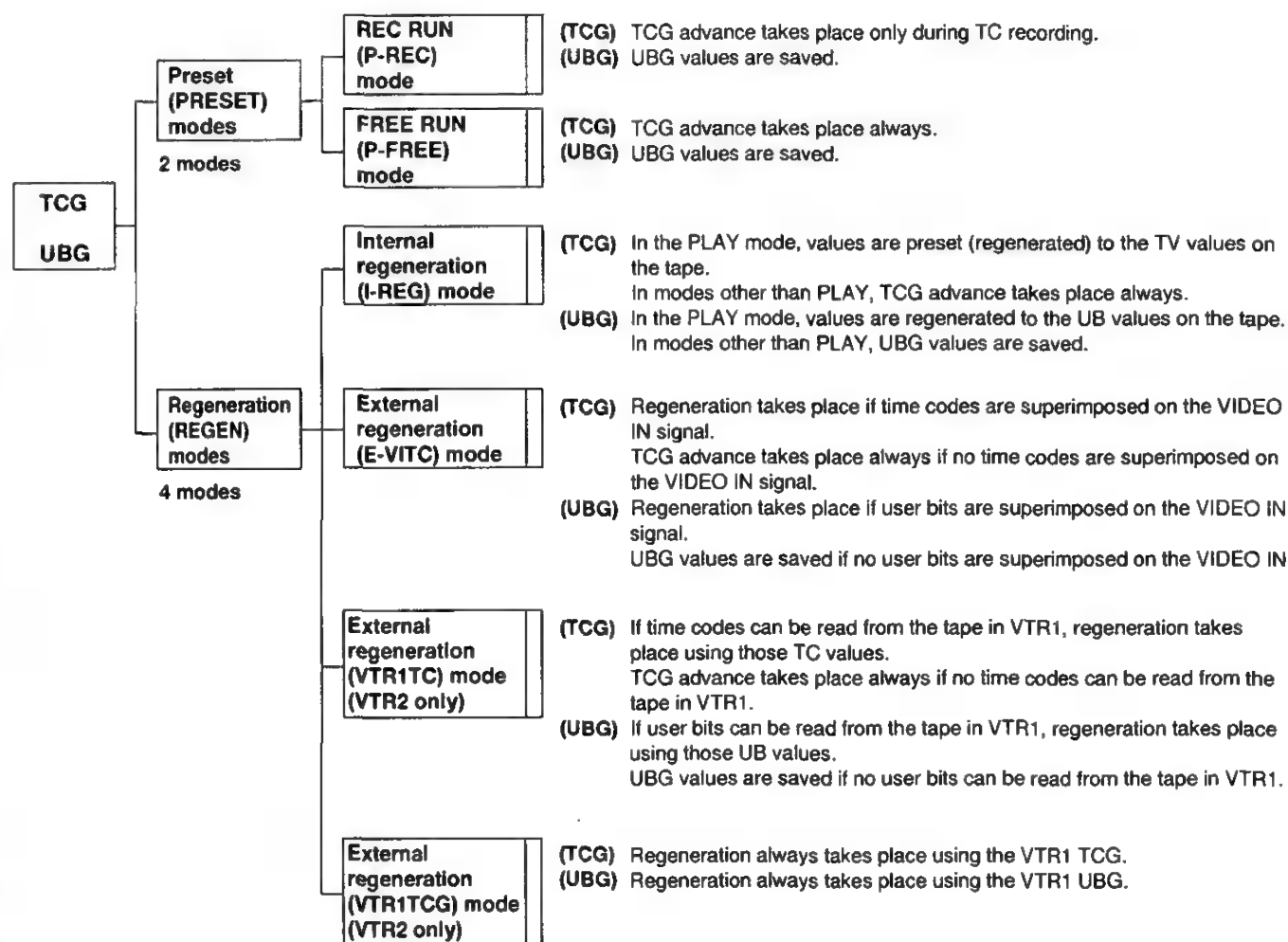
"n01" appears and the data of all the events are cleared.

# TIME CODES (TC) and USER BITS (UB)

## Time code generator (TCG) and user bit generator (UBG) modes

The time code generator (TCG) and user bit generator (UBG) have two main modes: PRESET and REGEN. Within the PRESET mode, there is a REC RUN mode and a FREE RUN mode. Within the REGEN mode, there is an internal regeneration mode and three external regeneration modes.

Details of the various modes are provided below.



## Time codes

The time code signals generated by the TCG (time code generator) are recorded on the tape and read by the TCR (time code reader). The time codes indicate the tape's absolute value in increments of hours, minutes and seconds.

TCR 00 : 07 : 04 : 24  
Hours Minutes Seconds Frames

## User bit

The user bit is a 32-bit (8-digit) information frame contained in the time code signals which is made available to the user. The figures 0 to 9 and the letters ABCDEF can be used for this bit.

# TIME CODES (TC) and USER BITS (UB)

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## Time code generator (TCG) and user bit generator (UBG) mode setting

The set-up menu is used to make time code generator (TCG) and user bit generator (UBG) settings.

For details on using the set-up menu, please refer to the TIME CODE setting (see pages 28 and 29) item numbers 503, 507, and 510. Also, the OPERATION MODE switch (see CONTROLS AND THEIR FUNCTIONS on page 8), which is one of the switches on the front keyboard, is used to make settings.

## Setting the mode of the time code generator (TCG) and user bit generator (UBG)

- 1 Set the VTR to the stop mode.
- 2 Switch to the set-up menu.
- 3 Set item No. 503 (TGN REGEN), item No. 507 (TC MODE), and item No. 510 (REGEN MODE) to match the desired mode. Use the OPERATION MODE switch to make selections.  
(Refer to the TCG and UBG Mode Table on the following page for more information on setting items.)
- 4 For the TCG mode, select either drop frame (DF) mode or non-drop frame (NDF) mode under item No. 506 (DF MODE).
- 5 To use TCG CF (color framing) flags, set item No. 505 (TCG CF FLAG) to ON (0001).
- 6 To use TCG special bit flags, set item No. 504 (BINARY GP).

### <Note>

The settings for item No. 505 (TCG CF FLAG), item No. 504 (BINARY GP), and item No. 506 (DF MODE) are valid only if the P-REC mode or P-FREE mode (which are listed in the TCG and UBG Mode Table on the following page) have been selected, or during first edit operation.

## Presetting the time code generator (TCG) and user bit generator (UBG) values

- 1 Set the VTR to the stop mode.
- 2 Switch to the set-up menu.
- 3 Set item No. 508 (TC PRESET) and item No. 509 (UB PRESET) to the desired values.

### <Note>

If the P-REC mode or P-FREE mode (which are listed in the TCG and UBG Mode Table on the following page) have been selected, settings can be made for item No. 508 (TC PRESET) and item No. 509 (UB PRESET).

### <Note>

If the unit is controlled via the external REMOTE terminal (9-pin) in order to perform editing, editing may take place in the MANUAL EDIT mode rather than the AUTO EDIT mode, depending on the controller being used. Therefore, item No. 507 (TC MODE) should be set to P-FREE (0001).



# TIME CODES (TC) and USER BITS (UB)

Time code generator (TCG) and user bit generator (UBG) mode table

1) AUTO EDIT mode (VTR2 only)

Menu No.510 REGEN MODE	VTR MODE	Menu No.507 TC MODE	OPERATION MODE switch	Menu No.503			
					TC&UB	TC	UB
AS&IN	ASSEMBLE or INSERT			TCG	I-REG	I-REG	P-FREE
				UBG	I-REG	P-FREE	I-REG
ASSEM	ASSEMBLE			Same as REGEN MODE = AS&IN			
	INSERT			Same as REGEN MODE = SW			
INSRT	ASSEMBLE			Same as REGEN MODE = SW			
	INSERT			Same as REGEN MODE = AS&IN			
SW		P-REC		TCG	P-REC		
				UBG	P-REC		
		P-FREE		TCG	P-FREE		
				UBG	P-FREE		
		I-REG		TCG	I-REG	I-REG	P-FREE
				UBG	I-REG	P-FREE	I-REG
		E-VITC	INT	TCG	VTR1TC	VTR1TC	P-FREE
				UBG	VTR1TC	P-FREE	VTR1TC
			EXT or SEP	TCG	E-VITC	E-VITC	P-FREE
				UBG	E-VITC	P-FREE	E-VITC
		VTR1TC	INT	TCG	VTR1TC	VTR1TC	P-FREE
				UBG	VTR1TC	P-FREE	VTR1TC
			EXT or SEP	TCG	VTR1TCG	VTR1TCG	P-FREE
				UBG	VTR1TCG	P-FREE	VTR1TCG

TCG/  
UBG  
actual  
mode

Items in the table above marked with a diagonal line are not related to mode settings.

2) Mode other than AUTO EDIT (VTR1 and VTR2)

Same as menu No. 510 REGEN MODE = SW in the AUTO EDIT mode.

Time codes (TC) and User bits (UB)

## TIME CODES (TC) and USER BITS (UB)

---

### REC SAME function

This function is used to record the same time code and user bit values on VTR1 and VTR2 when both machines are in the record (NORMAL REC) mode. The values from the time code generator (TCG) and user bit generator (UBG) are recorded on both VTR1 and VTR2.

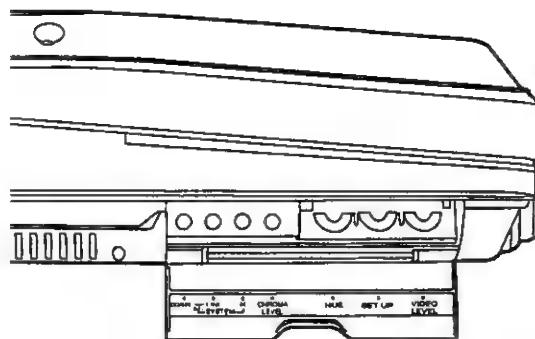
### Turning on the REC SAME function

- 1 Set the VTR to the stop mode.
- 2 Switch to the set-up menu.
- 3 Set VTR2 item No. 507 to VTR1TC (0004).
- 4 Set the OPERATION MODE switch on the front keyboard to SEP.

#### <Note>

The REC SAME function causes the time codes and user bits recorded on VTR1 and VTR2 to match only while both are in the record (NORMAL REC) mode. Therefore, if either VTR is not in the record (NORMAL REC) mode, it is possible that the time codes recorded on which ever VTR is in the record (NORMAL REC) mode may lack continuity. The same user bit values continue to be recorded. Also, VTR2 always uses the TCG and UBG of VTR1 for regeneration, regardless of the setting for item No. 507 (TC MODE).

# ENCODER ADJUSTMENTS

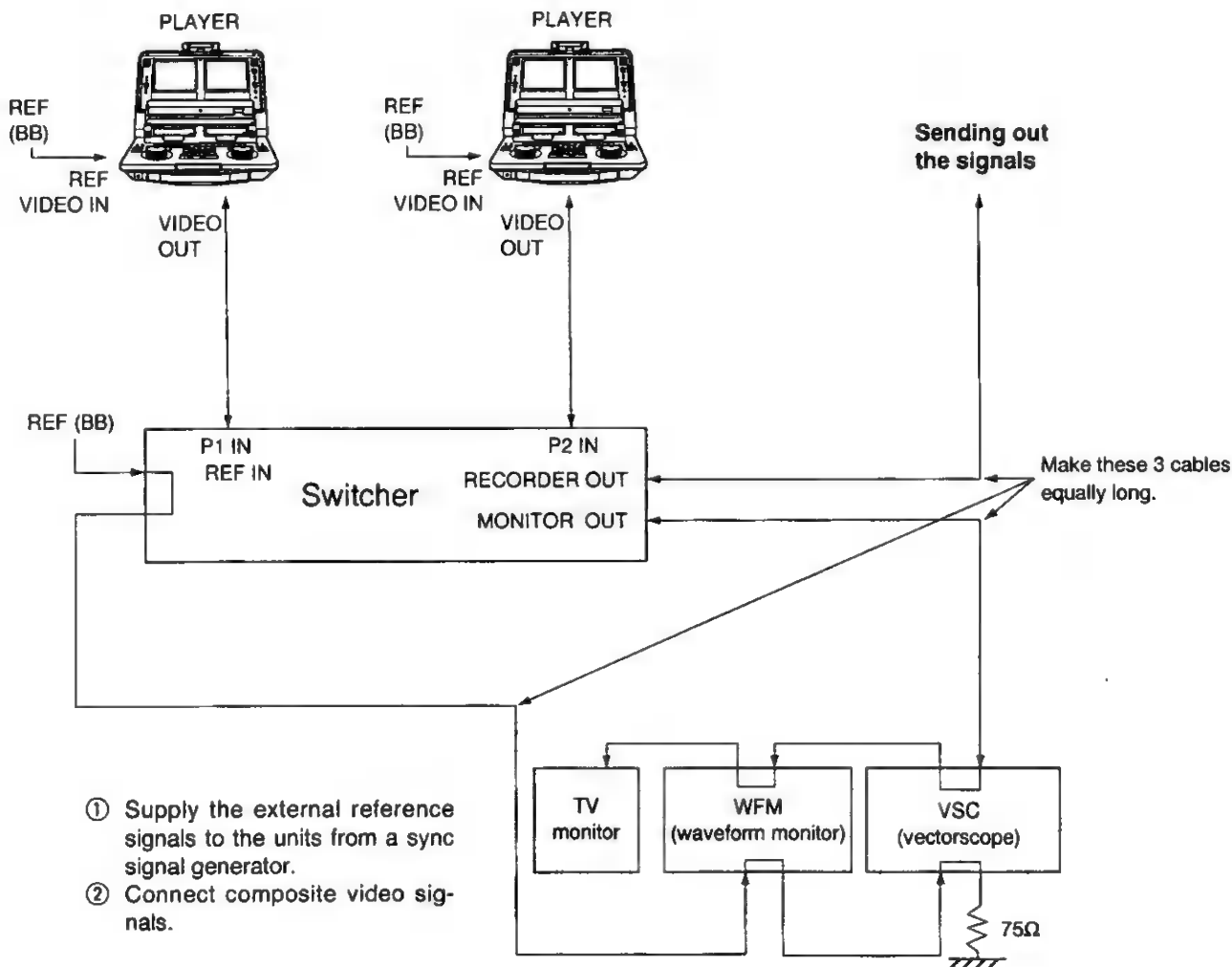


The video signals (ENCODER OUT) must be adjusted upon completion of the system connections before any signals are transmitted in order to conduct accurate error-free editing.

(This adjustment may have to be repeated whenever a connecting cable is replaced or the connections changed.)

## To adjust the encoder using the laptop:


- 1 Connect the units as shown below.

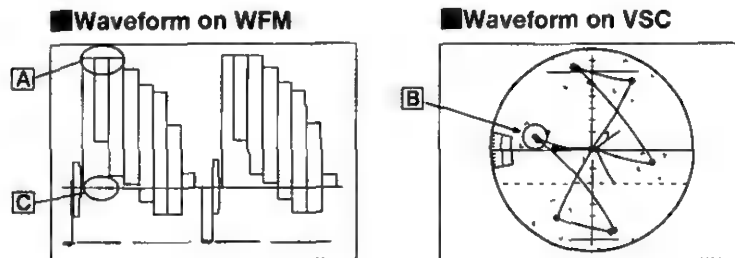


If a waveform monitor and vectorscope are unavailable, observe the images on a monitor and adjust to eliminate any color shifting.



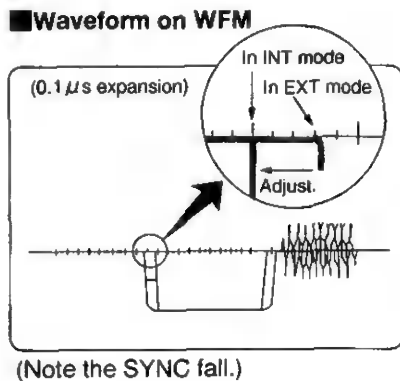
# ENCODER ADJUSTMENTS

- 2 Set the REMOTE/LOCAL switch to the position (LOCAL) where the adjustment is to be made.
- 3 Conduct the adjustments using a discrete source unit.  
Any deviation in the set-up level, video level, chroma level or hue will cause color shifting in the recorder. Adjust them using a discrete player.
  - 1) Play back a cassette tape on which standard color bars have been recorded.
  - 2) Adjust the controls in such a way that the waveform monitor (WFM) and vectorscope (VSC) achieve the following.
    - A Video level: Adjust this to 100IRE.
    - B Chroma level, hue: Adjust the two controls, and place the trace of the vector waveforms at the mark .
    - C Set-up level: Adjust so that there is no deviation.



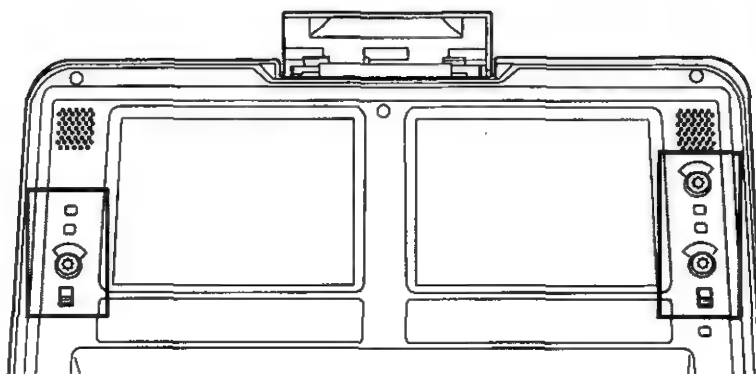
3) Conduct the same adjustments for the connected source unit.

- 4 Adjust the SYSTEM PHASE controls.
  - 1) Play back the standard color bars on VTR1.
  - 2) Adjust the SYSTEM PHASE controls of VTR1.  
Adjust so that the waveform monitor (WFM) achieves the following.
    1. In the INT mode, expand the waveform on the WFM to  $0.1\mu\text{s}$ .
    2. Check the H SYNC position.
    3. Now set the WFM to the EXT mode.
    4. In the EXT mode, adjust the SYSTEM PHASE (H SC FINE, SC COARSE) controls in such a way that the H SYNC signal is aligned with the position in 2.



# LIQUID-CRYSTAL TV MONITOR ADJUSTMENTS

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## Adjustment in display section

The brightness can be adjusted in the display section.

### To adjustment the brightness:

Turn the BRIGHTNESS control or set the LCD switch to LIGHT or DARK.

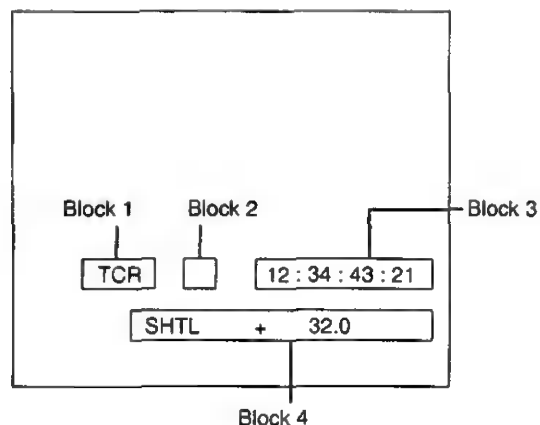
The screen brightens at the LIGHT setting and is dimmed at the DARK setting.

## Adjustments in set-up menu mode

The contrast, color and hue can be adjusted on the set-up menu. Use menu item No.802 (LCD CONT) for adjusting the contrast, item No.803 (COLOR) for the color, and item No.804 (LCD HUE) for the hue.

# SUPERIMPOSE SCREEN DISPLAYS

Superimposed displays can be added to the laptop's liquid-crystal TV monitor or to the signals output from the VIDEO MONITOR connector.



## Block 1

CTL : Control signal  
 TCR : Time code  
 T\*R : Time code (when it cannot be read)  
 UBR : User bit  
 U\*R : User bit (when it cannot be read)  
 TCG : Time code generator value  
 UBG : User bit generator value

## Block 2

No display : Normally, nothing is displayed here.  
 P : When the supply voltage has dropped  
 S : When the fan has stopped  
 L : When LOW RF

## Block 3

The counter values are displayed in units of hours, minutes, seconds and frames.

12 : 34 : 43 : 21  
 : Non-drop frame mode  
 . Drop frame mode  
 : Normal mode  
 · Time track mode

## Block 4

EJECT  
 STOP  
 REW  
 FF  
 STOP  
 STANDBY\_OFF  
 PLAY  
 REC  
 EDIT  
 E\_PLAY  
 SHTL  
 JOG  
 VAR  
 PPLY  
 POWER OFF  
 AUTO OFF  
 DEW

### • Search speed display

- In the jog mode, REV, STILL or FWD is displayed.
- The tape speed is displayed in SHTL, VAR and PPLY.

**SHTL - 32.0** (where "32.0" is the speed and "-" denotes the reverse tape direction (compared with "+" which denotes the forward tape direction))

With the on-screen display, the superimposed signals are added to the liquid-crystal TV monitor or to the signals output from the VIDEO MONITOR connector.

## To superimpose displays:

First check the connections, and then press the COUNTER/REMAIN switch. Check that characters are now displayed on the monitor.

If no characters are superimposed, press the COUNTER/REMAIN switch again.

For details on the superimposed display function, refer to the next page.

# SUPERIMPOSE SCREEN DISPLAYS

---

The superimposed displays can be changed using the set-up menus.

## **What is displayed:**

Either the time only or the time and operating mode can be selected as the superimposed display in set-up menu item No.000 (DISPLAY SEL).

## **Setting whether the superimposed display is to appear on the liquid-crystal monitor:**

Whether the superimposed display is to appear or not is selected in set-up menu item No.001 (LCD SUPER).

## **Characters displayed:**

The background for the characters displayed can be changed in set-up menu No.002 (CHARA TYPE).

## **CTL counter display:**

Either the 12-hour or 24-hour system can be set in set-up menu item No.003 (TAPE TIMER).

Besides these selections which are made using the set-up menus, the position where the superimposed characters are displayed can be switched to the top or bottom by pressing the COUNTER/REMAIN switch.

For details on the set-up menus, refer to pages 22 to 34.



# CONNECTOR SIGNALS

## VIDEO

VIDEO IN	BNCX1	
REF VIDEO IN	BNCX2	loop-through format with 75-ohm, automatic termination
VIDEO OUT	BNCX1	
PB VIDEO OUT	BNCX1	
VIDEO MONITOR OUT	BNCX1	

## AUDIO

AUDIO IN	XLRX2	CH1, CH2
AUDIO OUT	XLRX2	CH1, CH2
PB AUDIO OUT	XLRX2	CH1, CH2
AUDIO MONITOR OUT	XLRX1	CH1/CH2/MIX

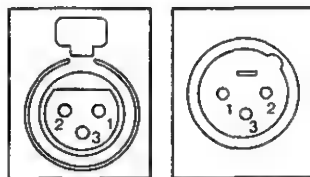
## DC IN

XLR 4P

## REMOTE (9P)

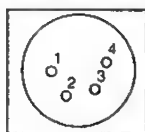
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	FRAME GROUND	4	RECEIVE COMMON	7	TRANSMIT B
2	TRANSMIT A	5	—	8	RECEIVE A
3	RECEIVE B	6	TRANSMIT COMMON	9	FRAME GROUND

AUDIO IN/OUT



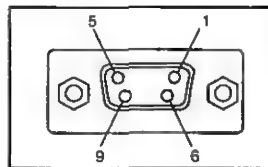
1. GND
2. HOT
3. COLD

DC IN



1. GND
- 2.
- 3.
4. +12V

REMOTE





# ERROR MESSAGES

When one of the following message numbers appears on the display, the VTR is set to the auto OFF mode (stop) or its power is forcibly turned off. Turn off the power, and then turn it back on. If the error persists after this, consult your dealer.

Error No.	Details of error	VTR operation
E-11	When the cassette was inserted, the reel motor locked up for about 2.5 seconds or longer. When the cassette is ejected, the VTR is set to the auto OFF mode.	STOP
E-21	When the cassette was removed, the front loading motor locked up for about 4 seconds. When the cassette moves down again and the motor locks up again even if an attempt is made to remove the cassette, the VTR is set to the auto OFF mode if the cassette has moved down.	STOP STOP
E-31	The loading motor locked up for about 4 seconds when the cassette was loaded. If the motor locks up even when the cassette is unloaded and loaded again, the cassette is ejected. The VTR is set to the auto OFF mode.	STOP
E-32	The motor locked up for about 4 seconds when the cassette was unloaded. The VTR is set to the auto OFF mode.	STOP
E-41	The FG (rotational speed) signal is not output from the cylinder motor.	STOP
E-42	The PG (phase speed) signal is not output from the cylinder motor.	STOP
E-43	The cylinder motor speed is abnormally high.	STOP
E-44	The cylinder motor speed is abnormally low.	STOP
E-51	The FG (rotational speed) signal is not output from the capstan motor.	STOP
E-52	The capstan motor speed is abnormally high.	STOP
E-53	The capstan motor speed is abnormally low.	STOP
E-61	The supply reel motor has locked up.	STOP
E-62	The take-up reel motor has locked up.	STOP
E-63	The supply reel motor speed is abnormally high.	STOP

## ERROR MESSAGES

Error No.	Details of error	VTR operation
E-64	The take-up reel motor speed is abnormally high.	STOP
E-65	Abnormal tension has been detected.	STOP
E-66	At the tape start or end, the short FF or REW operation does not stop even after 7 or more seconds.	STOP
E-67	A check sum error was detected in the serial data communication between the syscon and servo.	STOP
E-68	In serial data communication between the syscon and servo, the data was fixed at low or high and the absence of data was detected.	STOP
E-69	A communication error was detected in the serial data between the syscon and servo when the power was turned on.	STOP
E-70	About an hour has elapsed after the fan motor stopped. The VTR forcibly turns off its power.	Forced POWER OFF
E-71	The heat sensor was activated and an abnormally high temperature inside the VTR was detected.	Forced POWER OFF
E-72	Trouble in the solenoid drive circuitry was detected.	Forced POWER OFF
E-73	Trouble in the cleaning solenoid drive circuitry was detected.	Forced POWER OFF
E-BA	The input supply voltage dropped below the undercut voltage.	Forced POWER OFF (*)

(\*) The counter display flashes to provide a warning.

# DIAG-MENU OPERATIONS

The unit's system software version display, hour meter displays for the drum motor, rotating heads, etc. (for number of hours used can be viewed on the DIAG menu.

## DIAG-MENU HOUR METER

<VTR-2>

* H00	OPERATION	10000H
H01	DRUM RUN	10000H
H02	TAPE RUN	10000H
H03	THREADING	10000T
H11	DRUM RUN r	10000H
H12	TAPE RUN r	10000H
H13	THRREADING r	10000T

Hour meter display

## DIAG-MENU

<VTR-2>

DISPLAY	Ver<1.00-00>
AV-SYSCON	Ver<1.00-00>
SBC	Ver<1.06-00>
CYLINDER	Ver<1.00-00>
REEL	Ver<1.00-00>
END	

Version display

(Above display is version for VTR2.)

### To transfer from a regular mode to the DIAG mode:

- 1 Set the unit to the jog mode.
  - Remember that the mode cannot be transferred in the shuttle mode.
- 2 Press the DIAG (SHIFT+REC) buttons. (This cannot be done by remote control.)  
The hour meter displays appear on the VTR1 and VTR2 monitor screens.
- 3 Turn the dial to move to an item.  
Turn it clockwise (FWD) to move down and counterclockwise (REV) to move up.

### To display the version:

- 1 Press the FF button on the VTR2 while holding down the SHIFT button.  
The display changes from hour meter to version.

### To return from the DIAG mode to the normal mode:

Press the DIAG (SHIFT+REC) buttons.

The DIAG menu is for reference purposes only.

## DETAILED DESCRIPTION OF DIAG MENU

Details of the hour meter display are given below.

Item		Data	Description
No.	Display	Display	
H00	OPERATION	00000H : 999999H	The period of time during which the power has been supplied since it was turned on is displayed in 1-hour increments.
H01	DRUM RUN	00000H : 999999H	The period of time during which the drum has been rotating is displayed in 1-hour increments.
H02	TAPE RUN	00000H : 999999H	The tape travel duration in the fast forward, rewind, play, search (JOG, VAR, SHTL), recording or editing mode (but not in the STILL mode with JOG, VAR and SHTL) is displayed in 1-hour increments.
H03	THREADING	00000H : 999999H	The number of times the tape has been threaded or unthreaded is displayed in 1-time increments.

## OTHERS

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### Video head cleaning

This laptop has an auto head cleaning function which automatically reduces the amount of dirt on the heads. However, for even higher reliability, it is recommended that the video heads be cleaned every day.

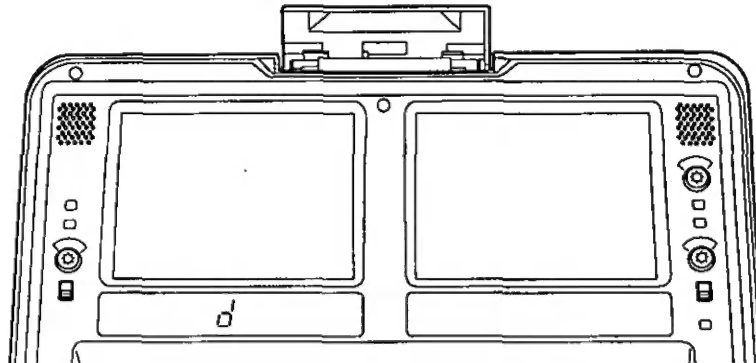
Use the cleaning fluid designated by Panasonic.

### Condensation

The principle behind the formation of condensation is the same as that which causes droplets of water (condensation) to form on the window panes of a heated room when it is cold outside. Condensation forms on the laptop or tape when it is moved to a location with a significantly different temperature and humidity. More specifically, it forms when the laptop of tape is:

- Taken to a very steamy and humid location or into a room where the heating was just turned on.
- Taken suddenly from an air-conditioned room to a very hot and humid location.

In such cases, do not turn the power on immediately but leave the unit standing for about 10 minutes. When condensation has formed in the unit, "d" appears on the counter section. Keep the power on and wait until "d" is cleared.



### Maintenance

Before proceeding with maintenance, set the power switch to OFF and be sure to take hold of the power plug to disconnect the power cable from the power outlet.

Use a soft cloth to clean the cabinet. To remove stubborn dirt, dilute some neutral detergent with water, dip a cloth into the solution, wring it out, and wipe away the dirt. Then wipe off any remaining moisture using a dry cloth.

### Cautions

Do not place the video cassette on top of bed covers or carpet when in use.

# SPECIFICATIONS

## GENERAL

Rating input: DC 12V 8.5A

Recording format:	DVCPRO
Recording tracks	Digital video
	Time code; Recorded in sub-code area
	Digital audio; 2 channels
	Cue signal; 1 track
	Control (CTL); 1 track
Tape speed:	33.820 mm/sec.
Recording time:	123 min. (with AJ-P123LP tape)
	63 min. (with AJ-P63MP tape)
Tape used:	1/4" thin magnetic layer metal tape
FF/REW time:	Less than 3.5 min. (with AJ-P123LP tape)
Editing accuracy:	±0 frame (with time code)
Tape timer accuracy:	±2 frame (per event when continuous CTL signal is used)
Servo lock time:	Less than 0.5 sec.
Ambient operating temperature:	41°F to 104°F (5°C to 40°C)
Ambient operating humidity:	10% to 85% (no condensation)
Dimensions:	16-3/4" (W) × 4-3/4" (H) × 17-1/4" (D) (424 × 120 × 435 mm)
Weight:	24.64 lbs (11.5 kg)

## VIDEO

### DIGITAL

Sampling frequency:	Y; 13.5 MHz, P <sub>B</sub> /P <sub>R</sub> ; 3.375 MHz
Quantization:	8 bits
Error correction:	Reed-Solomon codes

### ANALOG COMPOSITE IN/OUT

Video band range:	Y; 30 Hz – 4.5 MHz (±1dB)
DG:	Less than 6%
DP:	Less than 4.5°
Y/C delay:	Less than 20 nsec
K factor:	Less than 2%
Analog composite input:	BNC × 2 (VTR1, VTR2), 75 ohms
REF video input:	BNC × 2 (loop-through), 75 ohms, automatic
Analog composite output:	BNC × 2 (VTR1, VTR2), 75 ohms
Monitor output:	BNC × 2 (VTR1, VTR2), 75 ohms, superimpose ON/OFF

### VIDEO OUTPUT SIGNAL

Video gain:	More than ±3dB
Chroma gain:	More than ±3dB
Hue:	More than ±25°
Set up:	±10 IRE
H phase:	More than ±1.5µsec
SC phase (COARSE):	360°
SC phase (FINE):	90°

# SPECIFICATIONS

## AUDIO

### DIGITAL

Sampling frequency:	48 kHz
Quantization:	16 bits
Frequency response:	20 Hz~20 kHz±1dB
Dynamic range:	More than 85dB (1kHz, emphasis off, "A" weighted)
Distortion rate:	Less than 0.1% (1kHz, emphasis off, standard level)
Crosstalk:	Less than -80dB (1kHz, between 2 channels)
Wow & flutter:	Under measurable value
Headroom:	20dB
Emphasis:	T1=50μsec/T2=15μsec (on/off enable)

### ANALOG IN/OUT

Analog input (VTR1):	XLR×2 (CH1, CH2), high impedance, 4/0/-20dBu
Analog input (VTR2, CH1):	XLR, high impedance, 4/0/-20dBu
Analog input (VTR2, CH2):	XLR, high impedance, 4/0/-20/-50dBu
Analog output (VTR1):	XLR×2 (CH1, CH2), low impedance, 4/0/-20dBu
Analog output (VTR2):	XLR×2 (CH1, CH2), low impedance, 4/0/-20dBu

### MONITOR OUTPUT/HEADPHONES

Monitor output (VTR1):	XLR×1, low impedance, 0dBu, CH1/MIX/CH2 selectable
Monitor output (VTR2):	XLR×1, low impedance, 0dBu, CH1/MIX/CH2 selectable
Headphones:	Mini-Stereo, variable level (Max. -20dBu), 8 ohms, VTR1/MIX/VTR2 selectable, CH1/MIX/CH2 selectable

## OTHERS

Remote control:	D-sub 9-pin
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## LCD MONITOR

LCD display:	6.5 inches TFT active matrix×2 (VTR1, VTR2)
Brightness adjustment:	Variable volume×2 (VTR1, VTR2)
Screen adjustment:	Color, Tint, Contrast (separate left and right OSD menu)
Backlight switches:	Bright/Dark/Off (separate left and right switches)

## SPEAKERS

Built-in speakers×2, VTR1/MIX/VTR2 selectable, CH1/MIX/CH2 selectable

## DISPLAY TUBE (VTR1, VTR2 separately)

Counter:	8 digits (CTL/TC/UB selectable, total, remaining tape length)
Audio level meters:	16 steps
Others:	Servo lock lamp, DV lamp, tape travel status indication/recording inhibit lamp, DF lamp, Video/REF input lamp

Weight and dimensions shown are approximate.  
Specifications are subject to change without notice.

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# Panasonic

Broadcast & Television Systems Company

Division of Matsushita Electric Corporation of America

## Executive Office

One Panasonic Way (4B-7), Secaucus, NJ 07094

## Service Centers

**Eastern:** One Panasonic Way, Panazip (2A-4), Secaucus, NJ 07094  
(201)-348-7677 Fax (201)-348-7511

**Southern:** 1225 Northbrook Parkway, Suite #170, Suwanee, GA 30174  
(770)-338-6855 Fax (770)-338-6656

**Western:** 4001 West Alameda Ave., Suite 100, Burbank, CA 91505  
(818)-562-1579 Fax (818)-562-6663

## Parts Information & Ordering

9:00 a.m.-5:00 p.m. (EST) (800)-334-4881/24 hr. Fax (800)-334-4880

## Technical Support

Emergency 24 hr. Parts & Support (800)-222-0741

## Training Information

Digital System Products (201)-392-6076

## Service Literature

(201)-392-6281

## Panasonic Canada Inc.

5770 Ambler Dr. Mississauga, Ontario L4W 2T3 (905)-624-5010

## Panasonic de Mexico S.A. de C.V.

Av. Angel Urraza Num. 1209 Col. de Valle 03100 Mexico, D.F. (52) 1 951 2127

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